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## Inside Dope

By GEORGE  
F. TAUBENECKLearn to live and laugh —  
thus delay your epitaph

## Stories of the Week

Philosophy of the Week  
Good News!Don't Expect Too Much  
Do They Take Themselves  
Too Seriously?  
Out of Our Mailbag —  
And Who's Confused?

## Stories of the Week

A Yankee girl dimples: "you  
may."But a Belle of the South em-  
braces: "you *all* may.""If you had to choose between  
marrying for love or money,  
what would you do?""Oh, I suppose I'd marry for  
love. I do everything wrong.""I'll see you," smirked Phil,  
revealing four aces.

It was a strip poker game.

Calmly Pedro sipped his te-  
quila. An excited friend burst  
in and exclaimed:"Somebody is making love to  
your wife!""Um-m." Pedro considered  
the news. "Was he tall?"

"Yes!"

"Did he wear a well pressed  
suit?"

"Indeed!"

"And did he sport a droopy  
mustache."

"That's the man!"

"Never mind. That's Manuel  
—poor fool! He'd make love to  
anybody!"

## Philosophy of the Week

Step out if you want to  
step up.—Securities Acceptance  
Corp.Youth must learn to listen  
before it speaks, as the wheat  
must absorb before it can pro-  
duce the grain.—BISHOP FULTON  
J. SHEEN.Regret is a direct and heavy  
accusation of yourself; it means  
that life offered you something  
you wanted but were afraid to  
take.—BERNARD DE VOTO."A diplomat," wisecracks  
Douglas MacArthur II, "invents  
problems to go with good solu-  
tions."Television has opened many  
doors—mostly on refrigerators.A friend is someone whom  
you can always count on to  
count on you.

(Concluded on Page 6, Col. 1)

Hotter Than Normal August  
Predicted by Weather ExpertsNEW YORK CITY—Temper-  
atures in August—in the first  
part of the month particularly—  
are due to be hotter than normal  
again, according to long-range  
weather forecasts by both pri-  
vate and government forecast-  
ers.Weather Trends, Inc., a pri-  
vate forecasting agency whose  
long-range predictions have been  
published in the NEWS, forecasts  
warmer-than-normal tempera-  
tures in August for most of the  
country except the Northwest.  
Hottest area is scheduled to be  
in the plains states area center-  
ing around Arkansas, Okla-  
homa, and Missouri.The U. S. Weather Bureau 30-  
day forecast is much in accord  
with this, emphasizing that the  
hot weather will prevail in the  
first part of the month. In addi-  
tiontion to the central plains area,  
the U. S. forecast predicts "much  
above normal" temperatures in  
Minnesota, Wisconsin, Michigan,  
and parts of Illinois, Indiana,  
and Ohio, and in the Northeast.  
In parts of the Southeast and  
on the Pacific Coast, tempera-  
tures will be below normal, says  
the Weather Bureau.The Weather Trends forecast  
for July was published in the  
NEWS under the headline "Ex-  
tended Heat Wave In July May  
Boost Sales" which told the  
story very neatly. The hot spell  
lasted somewhat longer, and was  
(Concluded on Page 4, Col. 3)Carrier Announces  
New Floor Type  
Room ConditionerSYRACUSE, N. Y.—Carrier  
Corp. has announced "a com-  
pletely new kind of room air  
conditioner" which sits on the  
floor instead of a window sill.Air for condensing comes  
through the bottom of the  $\frac{3}{4}$ -  
hp. unit, and can be drawn from  
a well-ventilated basement or  
crawl space or through a short  
duct to an outside wall.The "Roomette" measures 27  
in. high, 15 in. wide, and 28 in.  
deep and has a flat marproof  
top so that it can double as an  
end table or lamp table along-  
side a davenport or chair. All  
controls and grilles for move-  
ment of conditioned air are lo-  
cated on the front panel.Developed originally for use  
in mobile homes, the device can  
be applied to almost any room  
in an ordinary residence, accord-  
(Concluded on Back Page, Col. 3)Boards Approve  
Hupp, Perfection  
ConsolidationCLEVELAND—Directors of  
Hupp Corp. and Perfection Ind-  
ustries, Inc., in separate meet-  
ings, unanimously approved an  
agreement for the merger of the  
two companies.This was announced in a joint  
statement by Don H. Gearheart,  
president of Hupp, and Donald  
S. Smith, president of Perfec-  
tion.Both companies have called  
meetings of their stockholders  
for Aug. 29 to vote on the  
merger.The business of Perfection  
(Concluded on Back Page, Col. 1)DETROIT—American Motors  
Corp. earned a net profit of  
\$1,592,307 in the quarter ended  
June 30, 1955, George Romney,  
president, has reported. This  
compared with a net loss of  
\$3,848,667 for the corresponding  
period a year ago, when Hudson  
operations were reflected for  
only the two months May and  
June, after the merger took  
place.Both figures are after tax  
adjustments. Before such tax  
adjustments, profit for the 1955  
quarter was \$3,213,307 com-  
pared with a loss of \$6,774,668  
for the 1954 quarter.Dollar sales of appliances in  
the June quarter were 22%  
higher than a year ago. Dollar  
sales of Kelvinator and Leonard  
appliances were up 12.7% this  
year, Romney stated.Sales for the June quarter  
this year were \$137,139,847  
(Concluded on Page 17, Col. 1)Fedders-Quigan  
Names De Fino  
Sales Vice Pres.MASPETH, N. Y.—Anthony  
J. De Fino, formerly vice presi-  
dent and general manager of the  
Buffalo Div. of Fedders-Quigan  
Corp., has been appointed to the  
newly-created post of vice presi-  
dent in charge of all sales.The announce-  
ment was made  
by Salvatore  
Giordano, presi-  
dent, who said that the new,  
intensified Fedders sales and  
promotion campaign has made  
it necessary to concentrate ad-  
ministration in this area.De Fino joined Fedders in 1945  
as a sales engineer, following  
three years service with the  
armed forces as a major in re-  
(Concluded on Page 17, Col. 3)

A. J. De Fino

Government Urges  
Prudence In  
Consumer CreditWASHINGTON, D. C.—While  
they disclaim any feeling of  
alarm, Federal banking authori-  
ties are casting a nervous eye  
at soaring consumer credit  
figures. They are advising  
bankers to do the same.By the end of June, instal-  
ment consumer credit had set a  
new record of more than \$25  
billion outstanding. An auto  
buying splurge this spring has  
boosted the total by more than  
\$1 billion in the last six months.As a result, Controller of the  
Currency Ray M. Gidney re-  
cently wrote to 4,800 national  
banks advising them that bank  
examiners will hereafter report  
to him on their instalment  
credit and other consumer lend-  
ing.The Federal Reserve Board  
(Concluded on Page 17, Col. 2)Westinghouse Again  
Manufacturing  
Own Room UnitsSPRINGFIELD, Mass.—Room  
air conditioners are again flowing  
from production lines at the  
Westinghouse Electric Corp.'s  
plant here after a 13-year  
"leave of absence," James R.  
Weaver, plant manager, an-  
nounced recently.Under pressure of war-time  
production, Westinghouse dis-  
continued manufacture of room  
air conditioners in 1942. A  
product pioneer with a full line  
of air conditioners in the early  
thirties, the company had ap-  
proximately 25% of reported  
industry-wide sales prior to  
World War II.Westinghouse re-entered the  
market last year with nine cur-  
rent models built to its engi-  
neering specifications by an out-  
side supplier.A modernization and equip-  
ment program, completed this  
month, will now enable full  
plant production of many 1956  
models of room air conditioners,  
Weaver reported. The plant will  
have an ultimate capacity of  
300,000 units a year.

(Concluded on Page 17, Col. 5)

## BEHIND PAGE ONE . . .

## Storing Steaks

Longer Cold Storage Increases Tenderness  
Of Steaks, Food Experts Find . . . . . 8

## Air Conditioner Odors

Research Indicates Methods of Reducing Coil Odors . . . . . 9

## Air Conditioned Combine

Rice Harvesting May Be Revolutionized  
By Experiment in Katy, Texas . . . . . 16

## Servicing Auto Air Conditioners

Regular Features and Departments . . . . . 18

Editorial . . . . . 10 What's New . . . . . 12

Refrigeration Problems . . . . . 14

Patents . . . . . 18 Contracts . . . . . 19

## RESULTS in MINUTES... NOT HOURS!

Thawzone starts to eliminate moisture as soon as it mixes with the refrigerant. Time is not lost waiting for the refrigerant to pass through a cartridge many times. You are able to put the unit back into operation promptly without further freeze-ups.

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**THAWZONE®**

THE LIQUID DRIER

## Washington Licensing Proposal--

(Concluded from Page 1)

refrigeration and air conditioning mechanic.

3. A \$10 license for a master refrigeration and air conditioning mechanic, limited (to equipment of 25 tons capacity or less).

4. A \$5 license for a journeyman refrigeration and air conditioning mechanic.

5. A \$2 license for an apprentice refrigeration and air conditioning mechanic.

The license would be renewable annually upon payment of the appropriate fee.

A contractor would be entitled to engage in the business of installing, maintaining, repairing, or replacing any refrigerating or air conditioning system or its components.

A master mechanic could supervise and perform any work required in connection with the

business, regardless of the size and nature of the equipment.

A master mechanic, limited, could do the same work of systems "up to and including 25 compressor horsepower or the equivalent tons of refrigeration in the aggregate."

The journeyman would be entitled to perform work under the supervision of either class of master mechanic.

An apprentice would be entitled to work under the direct personal supervision of a master mechanic or journeyman. But no more than two apprentices shall work with any one master.

### Contractor Must Employ Master Mechanic

A contractor, to hold his license, must employ at least one master mechanic or master me-

chanic, limited. If he has only the latter, he must limit his work to equipment of 25 hp. or less.

One such master must be a "designated master" who will be responsible for all work performed under permits issued to the contractor. The master must be available at all times to supervise the installation of equipment. Non-availability of the master could cost the contractor his license. A master can work for only one contractor at a time under the licensing provisions.

Contractors would also be required to put up a \$5,000 performance bond.

### Requirements for Master's License

To get a master mechanic's license, a man would need at least five years' experience in installing, maintaining, repairing, and replacing refrigeration and air conditioning equipment of 25 hp. and larger and pass an examination on the theoretical and practical aspects of the work.

To obtain a master mechanic, limited, license, a man would have to have the same amount of experience on equipment of 25 hp. or less and also pass the examination.

### Qualifications of Journeyman, Apprentices

A journeyman would have to show he had worked for at least three years as an apprentice and must pass an examination.

An apprentice must be 16 years of age or more, but need not show any previous experience or take an examination.

If these regulations are passed, these licensing provisions would not take effect before Feb. 1 of next year, it was indicated.

Applicants for a master mechanic or journeyman license who apply within 90 days after the regulations become effective, need not take the examination if they have the required experience. Master mechanics would also have to have at least one year of supervisory experience, however, with these proposals.

Work permits, for work requiring permits, are to be issued only to master mechanics or firms employing them.

### Proposal Provides Penalties for Violators

Violations of the proposed regulations would call for a fine of not more than \$300 or imprisonment of not more than 90 days.

Not subject to the above regulations would be:

Persons under contract to or working directly for the Federal government.

Licensed steam and operating engineers who perform refrigeration or air conditioning work for their employer.

Persons engaged in the general maintenance of self-contained unit systems containing not more than 2 lbs. of refrigerant, refrigerated vending machines, or other portable "plugged in," self-contained, refrigerated devices.

Direct employees of the District would require licenses but would not be asked to pay the fees.



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Watch it tell the world about FOODARAMA, sell the nation on FOODARAMA! Watch it take the entire Kelvinator line of appliances into millions of homes, nearly 50,000,000 hearts! For Disneyland, in less than a year, has joined the top five TV ratings, with a network of 170 stations!

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Gibson Refrigerator Co., Greenville, Michigan, has several territorial openings for salesmen who have had experience in selling 2 to 15 ton residential and commercial air conditioning. Attractive base salary plus bonus arrangement. This is a real opportunity to any man who wants to increase his earning power. Write Earl Palmer, Manager, Self-contained Air Conditioner Division.

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Greenville, Michigan

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Manufacturer

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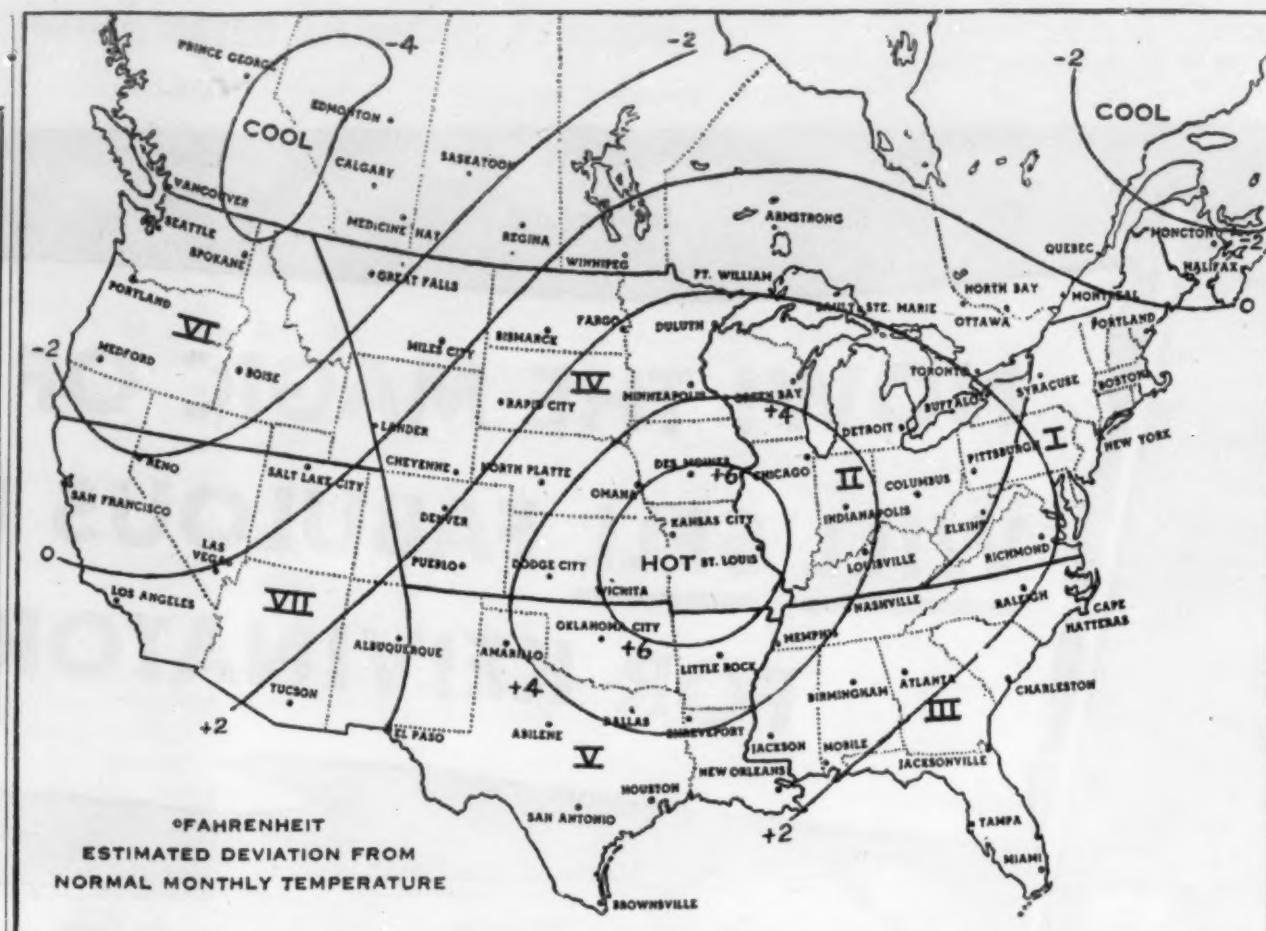
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Controls for Electronic, Re-  
frigeration, Industrial, Ap-  
pliance, Communication and  
Automotive Industries.



### August Will Be Hotter Than Usual--

(Concluded from Page 1, Col. 3) July's weather and similar to the pattern of August, 1954.

The Weather Trends, Inc. prediction for August, an explanation of the weather map published above, is as follows:

"Warmer than normal is the August forecast for most sections of the country except the Northwest. This temperature pattern is a continuation of

more widespread than the forecast indicated.

"An area encircling the states of Arkansas, Oklahoma, and Missouri will be among the most favorable for cooling equipment sales. Temperatures in these states are expected to average as much as 6° hotter than usual.

Air conditioner sales potential, based on weather, will also be

radius of 300-400 miles of this area.

In the important market centers of the Northeast and Great Lakes regions, the outlook is slightly better than normal and considerably better than last August.

"As for the Northwest, the cool trend which has been in effect for over one year, should continue through the summer. Sales in this area will hardly reflect its population and economic growth."

### UsAirco Plan--

(Concluded from Page 1, Col. 5) terms up to 36 months, according to K. G. Klohn, UsAirco credit manager.

"The CIT plan makes it possible for the dealer to close a packaged air conditioning installation sale immediately, under favorable terms, if he is confident of the responsibility of the customer, on sales up to \$4,000," Klohn said.

"Installations involving larger sums will require clearance from the Chicago office of CIT.

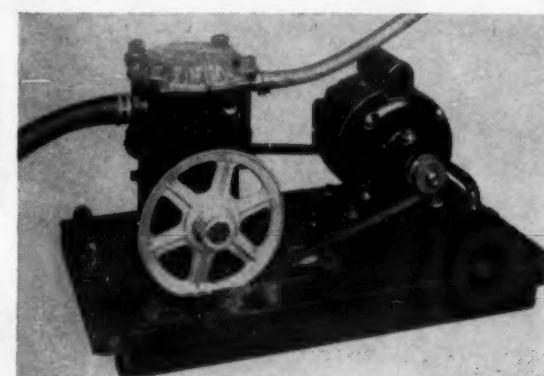
"Upon receipt of the signed contract, UsAirco will forward payment to the dealer and CIT will bill customer and collect."

The instalment sales charge will be 1/2 of 1% per month on the original unpaid cash balance, Klohn said.

The finance plan will be available on sales of UsAirco upright packaged air conditioners, home air conditioners, year-round residential air conditioners, and "Kooler-aire" air-cooled condensing units, with accessories, for residential and commercial use.

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Controls To 'Sense' All Conditions

## Laube Sees Need for 'Automation' In Air Conditioners

AUBURN, N. Y.—Air conditioner controls that will exactly balance compressor output against requirements, compensate for radiant heat, and automatically supply the proper amount of outside air are needed by the industry, believes Herbert L. Laube, president of Remington Corp. here.

He outlines his views in a recent journal of the Instrument Society of America under the provocative titled "Automation Presents a Challenge."

Laube first recalls the early ammonia systems with their manual controls, and then points to the modern automatic controls available for refrigeration today.

### Luxury to Necessity

"But where do we go from here?" he ponders. "As the luxury of today becomes the necessity of tomorrow, opportunity unfolds for those who make instruments and controls. Here, for example, are a few items we need in my industry:

1. A line voltage thermostat good for 1½ hp. at 230 volts which turns on either cooling or heating as required, with a neutral zone of approximately 3° F. This control would require no changeover from heating to cooling, or vice versa.

"My company has had a control like this for many years," Laube reveals, "but, being made up of a three-position thermostat, two relays, a transformer, and wiring, it is entirely too costly.

2. A simple inexpensive control that will vary the capacity of the refrigeration compressor in a room air conditioner so that it balances exactly the widely fluctuating requirements. This will eliminate the uncomfortable rehumidification of the room air which now occurs when a thermostat stops the compressor and the water on the cooling coil re-evaporates.

3. An inexpensive automatic 'radiation control' that will maintain a room at a few degrees higher, when not subject to radiant heat, than the temperature maintained when radiant heat is present. The west wall of a building, for example, radiates no heat in the morning, but a great deal in the late afternoon," Laube explains. "Such a control would compensate for this effect.

4. An instrument to automatically sense the 'freshness' of the room air and in turn control the minimum amount of outside air constantly introduced into a room.

### Air Not Free

"With respect to this last device you may say, 'Why not use as much outside air as you want? After all, isn't it free?' The answer is 'No' for several reasons," comments Laube.

"Roughly speaking, it takes three times the equipment and three times the power cost to condition a cubic foot of outdoor air as is required to recondition the same cubic foot of indoor air.

"This is the reason why engineers try to keep the amount of ventilation in an air condi-

tioning system at a minimum—and why so many air conditioning systems are short on ventilating air and give rather musty indoor conditions.

"In my office, for example, as a non-smoker, I need only 8 c.f.m. of ventilation. When I have a staff meeting and eight smokers attend, then I need 'ac-

cording to the book,' about 30 times as much—248 c.f.m.

"Just think of the energy that could be saved if every air conditioning installation were equipped with a device that would supply no more and no less ventilating air than required to keep occupied spaces 'fresh,'" suggests Laube.

## Lewyt To Consolidate 3 Operations In Long Island City This Year

NEW YORK CITY—Alex M. Lewyt said that he would move his Lewyt Air Conditioner Corp., which makes built-in wall air conditioners, and Lewyt Corp., which produces vacuum cleaners, to the new plant in October.

The new plant was recently purchased from the Ford Instrument Co. for \$2 million. Lewyt Ford had used it for storage. Lewyt Mfg. Corp., which makes electronics equipment, will be transferred later, Lewyt further stated.

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## Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

### Good News!

Management of the Ansul Chemical Co. of Marinette, Wis., cheerfully paid out an extra day's pay to its more than 600 employees, in recognition of their workers' achievement of going through the entire calendar year 1954 without a lost-time accident.

Ansul computed that its men worked a total of 1,043,199 hours without an accident—marking the first time they went over the million man hours worked mark.

The last lost-time accident occurred on Nov. 24, 1953. In exist. We don't have it. No broker does. There are stocks,

founded, only 29 accidents and no deaths have been recorded. From 1933 to 1953, Ansul registered a remarkable safety record, recording the lowest accident frequency rate in its industry—a figure based on the national average for all industries manufacturing similar products.

### Don't Expect Too Much

Merrill Lynch, Pierce, Fenner & Beane, the brokerage and investment house with offices in 101 cities, advertised:

"The Stock That Money Can't Buy!"

Continuing, the copy read: "That's the one people ask us about all the time. The one that's bound to go up . . . that pays at least 10% on your money . . . that won't ever sell for less than you paid for it.

"Well, that stock just doesn't exist. We don't have it. No broker does. There are stocks,

of course, that offer better-than-average opportunities for price appreciation over the years ahead. There are stocks that now yield 5%, 6%, even 8% or more on your money. There are stocks with a long-term record of relative price stability.

"We could name a number of each—but we won't. Because the same stock is seldom suitable for two investment objectives—let alone three!"

### Do They Take Themselves Too Seriously?

Quoting a favorite columnist, Bob Ruark:

"Our young people today—the ones who aren't out zip-gunning or jumping on people—seem very grave, very proper, and almost stuffily sedate. One young gentleman who ought to be booting a football around or experimenting with six or seven

kinds of cocktail combinations comes and sits at my feet.

"Sir," he says, "what do you think I ought to do to become a great writer? Don't laugh when I say this, but I want to be immortal."

"Well," sezzi, "maybe you ought to go out and find out about life. I believe that life is necessary to immortality, especially in the writing dodge. Look at Hemingway, look at Steinbeck. Two greater technicians on life, especially concerning gin and other people's bad habits, I never knew."

"No," he says, "I mean what are the exact steps you take? I am studying literature at school and have written some poetry, and have not yet decided whether I want to be a poet or a novelist or a dramatist. Do you think I should commercialize myself and try to make money, or should I first start to appear in the "little" publications, the ones that don't pay anything but prestige?"

### Out of Our Mailbag—And Who's Confused?

Babson Institute  
Babson Park 57  
Massachusetts

Editor:

I am a senior at Babson Institute of Business Administration. It is required that each senior write an industry analysis report covering all aspects of a chosen industry. This report generally runs two to three hundred pages and is very complete and technical thus requiring extensive research and documentation.

Household Refrigeration is the industry I have chosen. My reasons for choosing this industry are because my father is in the retail appliances business and I have always been interested in the manufacturing side of this field. I feel that the basic manufacturing knowledge which I will obtain from writing this industry analysis will help me in the future no matter what type of business I enter.

I have obtained all available information from the library and have sent letters to other companies and associations. I have gathered information on history and development of the industry but have found that much of it is not available or out of date.

I would appreciate any information you could offer me to help make this report complete. The following are the main topics with which my report will be concerned:

1. Structure and parts of the industry
2. Size of the industry and its maturity
3. Location of the industry
4. Manufacturing processes—raw materials to finished product
5. Labor
6. Market and channels of distribution
7. Competition
8. Government regulation and control
9. Financing

Your cooperation will be appreciated as it will help me to construct a more complete industry analysis report.

(Name withheld)

Answer: The vague aspects of your chosen industry still are a mystery to the people who have chosen to make it their lifework.

P.S.: Learn to spell, Bub; and then please ask specific questions.

### Typhoon Air Conditioning

Editor:

Following is a belated screwball slogan for your collection. I can't take the credit for it; read it in *TV Guide*.

Slogan for a brassiere firm:

"WE FIX FLATS"

. . . and, as the writer in *TV Guide* suggested, these might be sold in "filling" stations.

Noting that gems of philosophy often appear in your column, I offer you my favorite. First encountered it in the foreword of a textbook, and since it has affected my thinking:

"Say not 'This is the truth,' but 'So it seems to me to be, as I now see the thing I think I see.'"

JERRY BIXBY

**IDEAL**  
**Speed-Freeze**  
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ZELIENOPOLIS, PA.



Because Wolverine Trufin\* is integrally finned, it transfers twice as many valuable BTU's as does prime surface tube. That means you can design smaller units—save space and material—or you can develop a unit which will do a much bigger job.

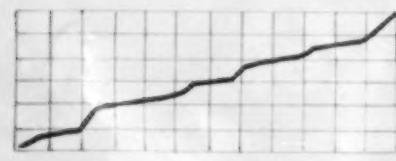
This extraordinary ability of Trufin to provide increased capacity—boost efficiency—in heat exchangers and condensers is a vital consideration for manufacturers of air conditioning and refrigeration equipment.

Because the fins are squeezed right from the tube wall, Wolverine Trufin possesses the stamina to stand up under the stress and strain of varying temperatures, pressures and vibration. This means long, trouble-free life—extra built-in efficiency.

Such problems as fabrication and design will be answered quickly by Wolverine's Field Engineering Service. You can get Trufin in a wide range of sizes and alloys in copper, aluminum, electric-welded steel and bi-metal. Trufin is another example of creative Tubemanship in action. Get the complete story before you place your next order. Write today for Wolverine's Trufin Catalog.

WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

\*REG. U. S. PAT. OFF.



LEADING THE WAY  
WITH RESEARCH!



**WOLVERINE TUBE**  
DIVISION OF CALUMET & HECLA, INC.  
Manufacturers of Quality-Controlled Tubing  
and Extruded Aluminum Shapes

Wolverine Trufin is available in Canada through the Unim Tube Co., London, Ontario

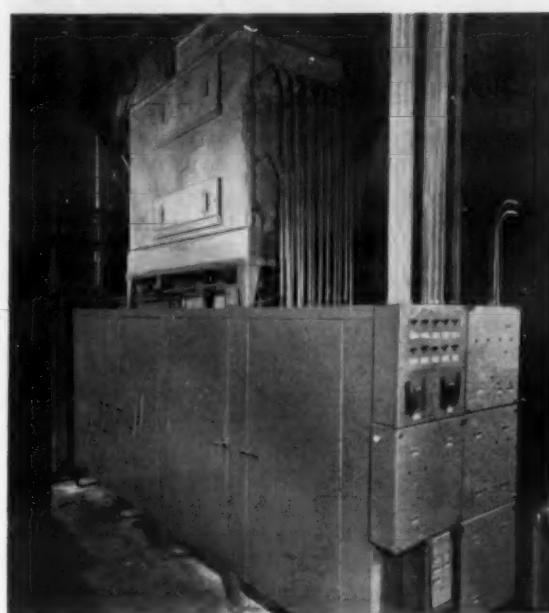
PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES  
IN PRINCIPAL CITIES.

EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 18, N. Y.

For more information about products advertised on this page use Information Center, page 12.

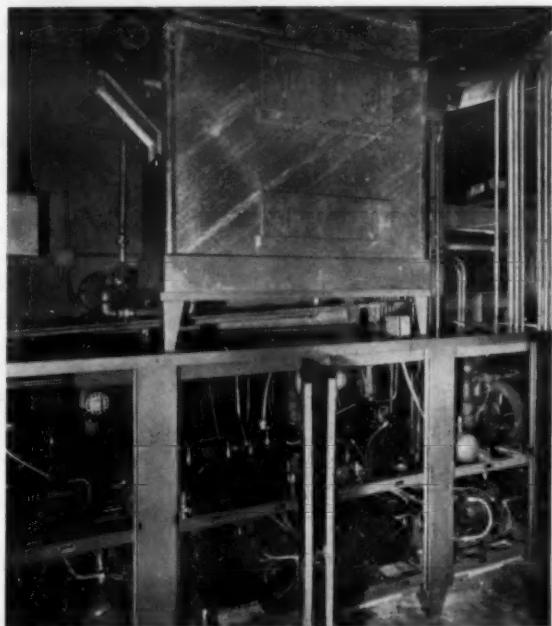
## Evaporative Condenser Sets on Top

## Multi-Circuit Condenser, Special Compressor Housing Provides Compact, Efficient Supermarket Installation



EFFICIENCY and compactness are provided in this supermarket refrigeration installation by use of a Dri-Fan multi-circuit evaporative condenser and a cabinet to protect the 10 motor-compressor assemblies. Cabinet requires only 25 sq. ft. of space. Note neat pipe lines.

MOTOR COMPRESSOR ASSEMBLIES, discharging into a Dri-Fan multi-circuit evaporative condenser, are housed in a cabinet for this supermarket refrigeration installation. Filtered and mechanically circulated air in the cabinet reduces service calls it is claimed.



TACOMA, Wash.—Mounting a multi-circuit evaporative condenser atop a special cabinet housing the compressors resulted in an outstanding example of efficiency and compactness for a supermarket refrigeration installation.

The installation, by Wingard & Co., Inc., at the Summit Trading Co., Summit View, Tacoma, features a Recold "Dri-Fan" evaporative condenser supplied by Refrigerating & Power Specialties Co.

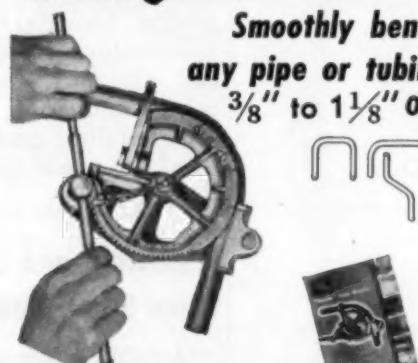
A total of 10 compressors are mounted on an angle iron rack discharging into the Dri-Fan

requires only 25 sq. ft. of floor space. The cabinet is sound insulated and ventilated with mechanically circulated and filtered air. The finish is a hammertone baked enamel.

According to Dick Wingard, who made the installation, the cabinet pays for itself in the savings from fewer service calls due to dirty units and lack of sufficient ventilation for motors and compressors.

The units now mounted on the rack consist of two complete air-cooled units and eight motor-compressor assemblies discharging into the Dri-Fan

## Handy Tube Bender



Smoothly bends  
any pipe or tubing  
3/8" to 1 1/8" O.D.

Just a twist of the wrist assures perfect, even, right-angle, U and offset bends. Save enough on ONE job to pay for your HANDY TUBE BENDER.

HOLSCLOW BROS., INC.  
428 N. WILLOW RD.—EVANSVILLE, INDIANA

**AIR CONDITIONING AND REFRIGERATION**  
the best equipment for all purposes by  
TEMPERATURE LTD.  
BURLINGTON ROAD • FULHAM  
LONDON, S.W.6 • ENGLAND  
Cables: TEMTUR LONDON

For more information about products advertised on this page use Information Center, page 12.

## Tritten In Carrier West Coast Post

SYRACUSE, N. Y.—Ray A. Payne divisions manufacture central home furnaces, water heaters, boilers, floor and wall furnaces, and unit heaters. In addition, the Monrovia Aviation Div. produces various parts for a number of aircraft manufacturers.

Tritten has been appointed assistant to the general manager of the West Coast divisions of Carrier Corp., it was announced here recently by Lyle C. Harvey, senior vice president of Carrier. Tritten will report to William J. Bailey, Carrier vice president who heads the company's four West Coast divisions—the Day & Night, Payne, and Monrovia Aviation divisions with offices and plants in Monrovia, Calif., and the Spectrol Electronics Div., San Gabriel, Calif.

In order to supply 100% outside air to the Dri-Fan blower unit and eliminate drawing chaff, lint, and dust from the warehouse into the condenser, an intake plenum was built around the blower unit.

## Vilter Names Veliath

MILWAUKEE — Appointment of Felix J. Veliath as assistant export manager for the Vilter Mfg. Co. was announced recently by the company.

Carrier's Day & Night and

Tritten joined Carrier in 1947 after a brief association with Noma Electric Corp. where he served as assistant to the vice president in charge of manufacturing.

After subsequent appointments as assistant superintendent, standards department, and director of process engineering, Tritten was named chief factory engineer of Carrier's Unitary Equipment Div. in 1953. In 1954 he was appointed product manager for Carrier "Self-Contained Weathermakers," from which post he comes to his present assignment.



## ...Through Spinning

Whittling away at the cost of components is a vital assignment of air conditioning and refrigeration engineers.

A successful solution to the problem is often found in still another example of Wolverine's creative Tubemanship—the exclusive Spun End Process\*. With it, such parts as accumulators, driers, accumulator-driers and receivers are quickly and economically produced.

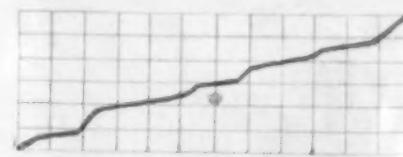
By spinning the ends of a length of tube, (copper, brass, aluminum or steel) in special dies, Wolverine can form, in one operation, a wide variety of contours and end closures. Such steps as deep drawing, machining and assembly are eliminated—and parts produced point up the cost and timesaving advantages of working with Wolverine.

Here is another area where you can count on solid help from Wolverine's Field Engineering Service. Better investigate right now. A good start is to send for Wolverine's Spun End Book—there's one earmarked for you!

WOLVERINE TUBE, 1413 Central Avenue, Detroit 9, Michigan.

\*A PATENTED PROCESS. RE. 2245

GROWING UP WITH  
THE REFRIGERATION  
INDUSTRY!



**WOLVERINE TUBE**  
DIVISION OF CALUMET & HECLA, INC.  
Manufacturers of Quality Controlled Tubing  
and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES  
IN PRINCIPAL CITIES.  
EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 16, N. Y.

## Longer Cold Storage Period Increases Tenderness of Steaks, Food Experts Find

COLUMBUS, Ohio—Studies have shown that increased length of cold storage increases the tenderness of steaks. This was reported at the 15th annual meeting of the Institute of Food Technologists by Pauline C. Paul and L. J. Bratzler of the Department of Foods and Nutrition, and Animal Husbandry, Michigan State college. (The former is presently with the Home Economics Dept. of the University of California).

Excerpts from their report follow:

"Eight pairs of *Longissimus dorsi* muscles from prime, good, and commercial grade beef animals were used to study the effects of various cold storage and freezing and thawing treat-

ments on cooking time, cooking freezing and thawing in increasing the tenderness of steaks. Any handling of the muscle, such as removal from the carcass before or during storage, or cutting of the muscle on the carcass, interfered with the tenderizing process and resulted in less tender steaks than those aged in the normal manner on the carcass.

"Additional cold storage or freezing of the steaks after three days' aging on the carcass increased the tenderness. Within the time studied (0, 1, or 2 days additional storage) cold storage was nearly as effective as

"Frozen steaks cooked without thawing were less tender than those thawed before hand.

"In most of the muscles, the anterior and posterior portions differed in tenderness, the anterior being the more tender in the majority of cases. There was also considerable variation in individual steaks within each portion. . . .

"Normal (on carcass) cold storage of 7 to 9 days after slaughter tended to minimize these variations. Also, the variations were more pronounced in beef of lower grade.

"Significant differences in cooking time and losses were —always refrigerated."

found among the various treatments. The high correlation between cooking time and losses indicated that one of the major factors affecting cooking loss was the time required to cook the steak."

### Skip's Markets Brag About Cold Feet— 350 of Them

ROCHESTER, N. Y.—"We've Got Cold Feet" declared a recent newspaper advertisement for Skip's Markets here.

Said ad copy: "Yes, here at Skip's Markets, we've really got cold feet, over 350 cold feet of refrigerated counter space. That's very important to you now that warm weather is here.

"It means that the meat you buy from any of Skip's Markets is perfectly protected at all times—always clean and fresh

## Hussmann Gains In First Half; Orders Up 17½%

ST. LOUIS—A very substantial increase in orders during the first six months of this year and a higher volume of shipments than in any other six months in the company's history was reported by Hussmann Refrigerator Co. here.

Net sales for the period were \$15,458,495 as compared with \$13,158,584 in the first half of 1954, a gain of 17.5%. Net profit after income tax was \$1,340,533 this year as compared with \$770,418 last year.

W. B. McMillan, president, reported that net income per share was \$2.14 for the six months ending in June as against \$1.18 in the 1954 period.

While civilian goods shipments were up, aircraft division sales declined. The government is currently paying Hussmann \$928,754 on a contract termination claim.

McMillan reported that instalment receivables advanced \$671,557 the first six months.

"We have maintained records on the condition of instalment receivables for more than 20 years," he said. "It is interesting to note that the present condition of our instalment receivables, although at a record peak as to volume, is the best it has ever been during that 20 years."

### NCRSA Convention Will Be Held November 28-29

ATLANTIC CITY, N. J.—Topics based on "currently important problems" are slated for discussion when the National Commercial Refrigerator Sales Association holds its ninth annual convention at the Traymore hotel here Nov. 28 and 29.

The NCRSA convention will be held during the 9th Exposition of the Air-Conditioning and Refrigeration Industry.

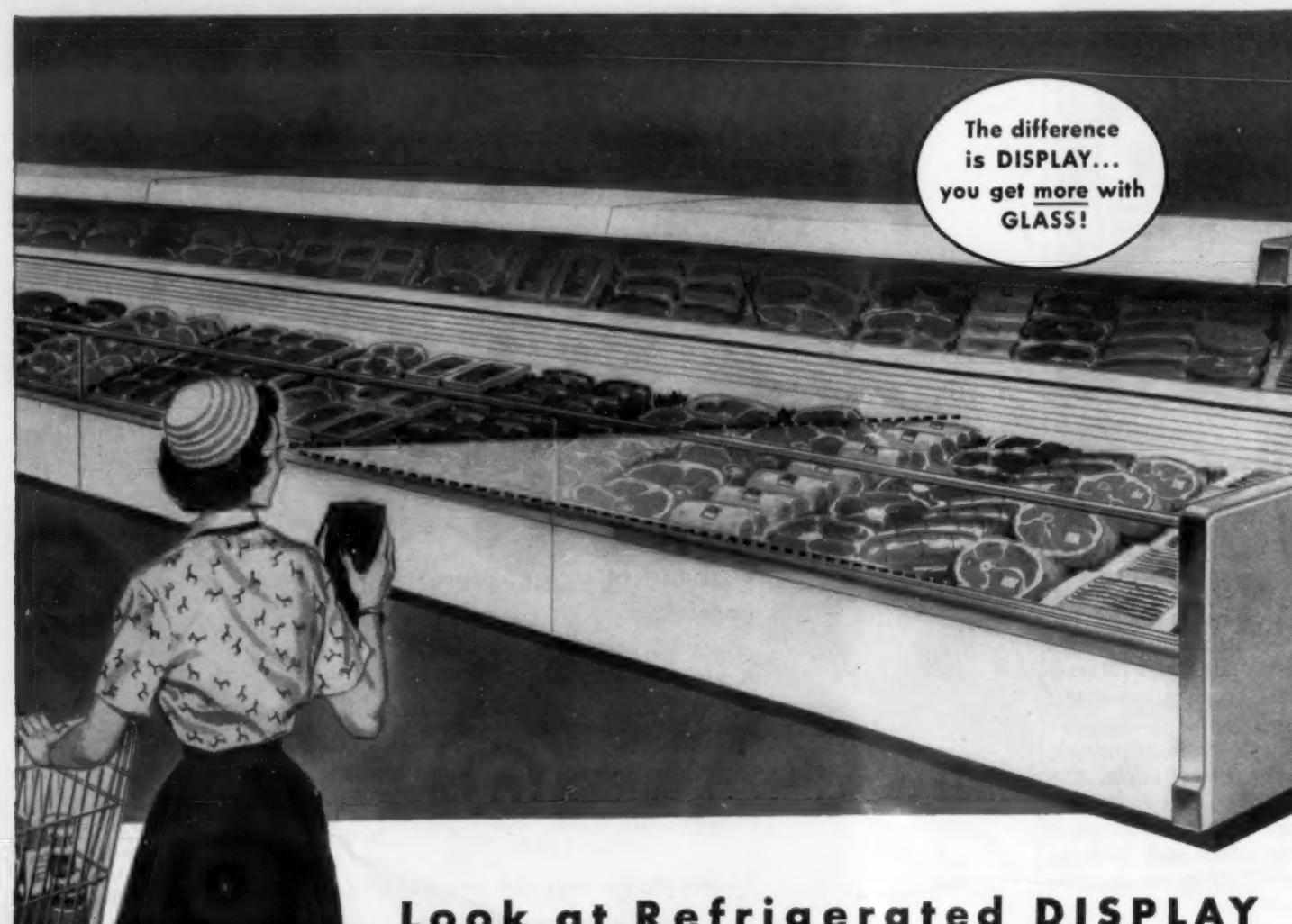
Speakers have not yet been announced, but discussions are planned on leasing of equipment, display space for frozen foods, benefits of selling through distributors, accounting methods that permit a closer check on profits, benefits in buying from distributors, selecting and training salesmen, inspiring salesmen, conducting a sales meeting, building profits with packaged air conditioning, and making the sale.

### 2 Heating and Cooling Firms Incorporated

AUSTIN, Texas—The following air conditioning and heating companies have been incorporated in recent weeks, records in the Secretary of State's office here show:

Mya Air Conditioning and Heating Co., San Antonio; capital stock, \$2,000; incorporators, R. Charles Estell, Richard E. Chesnutt, and R. E. Posey.

Centex Air Conditioning and Heating Co., Dallas; capital stock, \$5,000; incorporators, W. A. Rogers, D. B. Hightower, and F. E. Young.

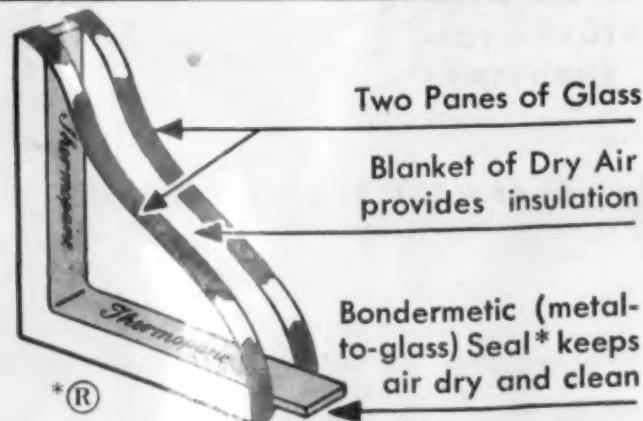


### Look at Refrigerated DISPLAY from the SELLING Angle!

You need glass in your refrigerated cases because she has to see before she will reach. Regardless of case height, a big display window of *Thermopane*\* insulating glass lets your customers see more... helps you sell more.

*Thermopane* combines visibility for increased display with insulation for operating economy. Only *Thermopane* has the famous *Bondermetic Seal*\* which prevents condensation between the panes of glass and keeps out dirt. There is no organic material to deteriorate.

The next time you look at refrigerated cases, remember that display makes sales, and *Thermopane* gives you more display. *Thermopane* is used by all leading refrigerated case manufacturers. Look for the name imprinted on the seal between the panes. Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.



**Thermopane**  
INSULATING GLASS

**LIBBEY·OWENS·FORD**  
a Great Name in Glass

For more information about products advertised on this page use Information Center, page 12.

## Air Conditioner Odors Lessened by Dry Coil Operation

SAN FRANCISCO — Aluminum coils, treated with chromic or phosphoric acid, are the least subject to "air conditioning coil odor," it was revealed before the American Society of Heating and Air Conditioning Engineers during the group's semiannual meeting held here recently.

Results of extensive research into this perplexing problem were discussed by A. B. Hubbard, liaison engineer of General Electric Co.'s Air Conditioning Div., and Nicholas Deininger and Frederick Sullivan, research chemists of Arthur D. Little, Inc.

It was found that tinned copper and bare copper coils ranked below the aluminum coils.

### 2 Categories of Trouble

"It is necessary at the outset to distinguish carefully between two categories of odor trouble," the authors emphasize. "The more common odor complaint is the result of too much tobacco, food, body odor, or combinations of these being produced for the amount of ventilation or infiltration air available to dilute them."

"The offending odors plainly indicate their origin, such as tobacco, food, or body odor. Installers and servicemen are prepared to correct such situations through intelligent appraisal and action."

"The routine odor difficulty has two unique characteristics: the odor is easily identifiable as to origin, and the air conditioning system is not its focal point," the authors state.

"The other type of odor trouble is the subject of this paper and is called by experienced servicemen 'air conditioning odor,' 'coil odor,' or 'air conditioning coil odor.'

### Coil Odor

"Coil odor is not only very foul and disturbing, but is both foreign and familiar to every layman. It is foreign in that such a blend never occurs in any other connection. It is familiar because coil odor vividly reminds each person of his most revolting odor experience...."

"The onset of coil odor takes one of two forms. It may appear in full force within a week of installation. On the other hand, the early indication may be only a puff of foul odor during the morning start-up."

"In either case," say the authors of the paper, "the premises may be overwhelmed for several weeks during September and October, particularly when a long, sustained spell of hot weather suddenly moderates."

### Research Began In 1948

Initially, in this research program which began in 1948, field studies were made for a year. Lack of conclusive results led to a laboratory study using four experimental coils in a test room.

Results of applying tobacco smoke, cooking food odors, synthetic perspiration sprays

and combinations of these were evaluated by a trained panel.

"During the tests the humidity was controlled to insure that the coils dripped normally during cooling operation.

### Dry Coil Operation

"A special series of tests established that dry coil operation resulted in the least odor pick-up, normal dripping operation increased the odor load, and 'borderline dehumidification' caused a noticeable worsening of odor performance," the authors revealed.

"This last operating condition is characterized by a heavy coating of moisture on the coil surface with drops clearly seen but with none dripping off.

"Air conditioning coil odor is an unnatural blend of odorous substances accumulated on the

surface of the coil. It is caused," the authors say, "by selective adsorption of various odor components from the normal environmental odors.

### Adsorption More Rapid On Cold Surface

"Some components of a complex odor blend are adsorbed more readily than others, the speed of adsorption and the preference patterns being functions of the kind of surface.

"An impressive amount of odorous material may collect on a coil surface even though the environmental odor is below or near threshold level. Adsorption is more rapid on a cold surface and is probably influenced by the condensation of water vapor," they found.

"Direct comparison of all-aluminum, aluminum fins on

copper tubes, and all-copper coils indicates that they rank in that order from best to the worst.

That is, the effect of the copper tubes shows through to partly offset the better performance of aluminum."

### McCord Adding to Ohio, Ind. Plants

DETROIT—To provide for increased production of refrigeration and air conditioning coils and oil coolers, McCord Corp. is constructing 40,000 sq. ft. of additional manufacturing space at its Washington, Ind. plant.

The company said that it is also adding 35,000 sq. ft. to its Wauseon, Ohio plant, principally for the replacement division.

## Day & Night Names Kelley Heating and Cooling Manager

MONROVIA, Calif. — George Kelley has been named manager of heating and air conditioning by Day & Night Div. of Carrier Corp.

Kelley's background includes two years in Atlanta with the district and regional sales offices of Carrier, a part of which time was spent as district sales manager for residential air conditioning.

His most recent position was that of chief sales engineer for a large wholesale distributor in Bakersfield, Calif.

Kelley's duties will consist of the organization and dissemination of information from the air conditioning and heating engineering staff at Day & Night, the company said.

## "Our New Homes are 100% MARVAIR"

...says Meadow Corp., Mobile, Alabama



One of the attractive Marvair-equipped homes in Meadow Corporation's Farmingdale project at Mobile. Mr. Rountree, quoted below, is at left.

### Offer YOUR Customers the Air Conditioners that are TOPS in PERFORMANCE, LOWEST in PRICE!

"We selected Marvair Air Conditioning for every home in our big new Farmingdale project because it keeps us ahead of the field in *value*, below competition in *price*," writes Harold Rountree, Meadow Corporation, Mobile, Alabama.

"Also, we like Marvair's extreme ease of installation, unusual quietness, fine performance and freedom from servicing worries. Economy of operation is a popular feature with our home buyers. Our two coming projects will be 100% Marvair too!"

Proved *right* by project builders, Marvair Air Conditioning is right for home modernizing as well. Quality-built of finest materials, there's a Marvair to meet every home requirement, every family budget.

In the commercial field, we make water- and air-cooled units for stores, offices, small plants; also horizontal type for any forced-air furnace. Marvair is the only complete line not restricted to franchised dealers. For more volume, more profit, go MARVAIR all the way!

### Marvair ...the Complete Air-Conditioning Line

For Every Home,  
Office, Store, Plant  
Requirement

Conforms to all  
FHA and VA financing  
specifications

New Remote Waterless  
MARVAIR • Condenser goes  
anywhere—horizontal or  
vertical flow evaporator  
can be installed with any  
type of warm-air furnace.

#### AIR-COOLED



#### WATER-COOLED



Write for Spec Sheets, and Nearest Jobber, to:

**MARVAIR DIV., MUNCIE GEAR WORKS, INC.**  
MUNCIE, INDIANA

A Great Name in Heating and Air Conditioning

Trade Mark  
registered  
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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.



## OFF THE CHEST

bids on basis of these specifications;

4. Consign the full responsibility of analyzing the bids received to that Mechanical Engineering firm or architect, who can evaluate each proposal on the basis of its individual merit as to type of equipment; responsibility of firm; ability to service, etc.

Such bids received cannot be on a comparative and competitive basis.

With reference to our December, 1954 proposal, it is our opinion the method of installation suggested in our schematic drawing has merit; however, please do not misconstrue our thought. We do believe you owe it to yourself to be fully satisfied, not only with equipment but installation as well, and standardizing the specifications is the only reasonable approach.

We certainly agree there is an acute need for a standardization in the room air conditioning industry, but insofar as commercial is concerned, it is our opinion most reputable air conditioning firms maintain an adequate staff.

In conclusion may we suggest that our interest in possible air conditioning facilities for your department store is no less abated and we will welcome the opportunity and consider it a privilege to present a firm bid on any set of plans and specifications which you will make available.

M. M. LEWIS

They'll  
Do It  
Every  
Time

by  
Jimmy  
Hatto



## How Many Women Are Brave Enough To Buy Pastel Colors?

Current upswing in the use of color in kitchens reflects a radical transformation in family habits. Nowadays, apparently, a kitchen is where people LIVE. Formerly, and formally, it was a functional food factory. (Do we hear shades of our grandparents protesting that *they* lived in the kitchen too?)

When automatic refrigerators, freezers, etc., came along to relieve kitchen drudgery, crisp white invariably symbolized efficiency and cleanliness. For at least three decades you could sell any old color of home appliance so long as it was an antiseptic white.

Recently, though, pastel color has reared its beautiful head. And it is creating a great deal of excitement.

**Today's colorful kitchen** has become important to quite a lot of imaginative, idealizing, home-entertaining hostesses. They want distinctive home decoration to enhance their own personalities—so, they go for colorful surroundings. Papa pays the bill—cheerfully, in many cases, because it makes the little woman so much happier.

Here's a good reason: Percentage of families who dine regularly in the so-called kitchen area is on the increase; entertaining of guests regularly takes place there; and even the television set sometimes is pointed toward this food-and-drink intake area.

**Furthermore, color is** an emotional stimulant which dissolves boredom from women's onerous daily tasks. Also, it de-emphasizes the heat of cooking and baking, and creates a cheerful and happy atmosphere in which well kept gals can work and live happily.

That's why alert dealers are helping restless housewives to select colorful refrig-

erators, freezers, *et cetera*. Their recommendations are keyed to the scientifically tested emotional impact of certain colors, as well as to the personal tastes of their customers.

**Industrial designer** Walter Dorwin Teague is almost a lone dissenter against colored kitchen appliances.

"I don't hold with slip-covered refrigerators," he disrupts, "and a range that looks like anything but a very superior cooking device should be rejected on sight. Imagine being stuck with a lump of color of that size for the duration of a major appliance's life—10 years or more."

Mr. Teague could be right, especially as to the feelings of older folk. It is true that "settled" people who own white refrigerators seldom buy colored ranges or dishwashers. At least, they haven't so far, to any degree. But dealer-subscribers to AIR CONDITIONING & REFRIGERATION NEWS confide that designer Teague is out of step with the Younger Marrieds. He is a minority of one where their tastes are concerned.

**For example:** Half the appliance dealers participating in a *Woman's Home Companion* test panel display colored appliances, and only 7% have had any serious inventory problem as a result.

Problems of inventory (and replacement parts) for dealers are multiplied by "color," to be sure. Yet, undeniably there's a trend toward colored appliances amongst those who are building new homes. Even though its forward progress might appear to be glacial, we'd better get used to the idea. Why? Because women rule the purse strings of this nation. And women are colorful!

Sol Lewis Co.  
2020 Farnam St.  
Omaha 2, Neb.

Editor:

Here is a copy of a letter in reply to one published in your newspaper:

We read with interest your letter to AIR CONDITIONING & REFRIGERATION NEWS (of June 6, 1955) regarding your difficulty in getting a firm bid on air conditioning facilities for your department store.

As we are one of the five bidders who submitted a proposal for your consideration, may we feel free to offer a comment at this time?

There are many methods in determining what should be done in order to provide adequate air conditioning facilities and the most practicable manner in which to obtain the desired results therefrom:

1. By enlisting the services of a reputable firm in which you are confident you can place your trust to accomplish an engineered installation;

2. By soliciting the services of a recognized mechanical engineering firm and retaining them (financially) for the specific purpose of having them draw up a set of plans with complete specifications as to minimum equipment requirements and method of installation;

3. Advertising for contract

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### To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration; manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 52 issues.

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Gentlemen:

Send the NEWS every week for one year.

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8-1-55

## McMillan Making Heat Pumps for Home, Commercial Use

JACKSONVILLE, Fla. — W. W. McMillan & Co., specialist in the installation of heat pumps in Florida since 1947, has started the manufacture of home and commercial package units from 2 to 15-hp. capacity and custom-built jobs up to 100 tons.

A one-story building at Miami Rd. and Hendricks Ave. here has been leased as a factory and showroom. Additional building space is available.

An initial output of five package units per day is scheduled. The company's plans contemplate eventual employment of 100 to 150 persons.

"A pioneer in the commercial development and design of heat pumps, Mr. McMillan has installed 400 units in Jacksonville alone since he started in the business in 1947," the announcement said.

"McMillan has engineered and designed the heat pumps he has been distributing in Florida and elsewhere, where were manufactured outside the state. Now he is to do his own manufacturing.

"Distribution of the McMillan units will be through dealers and contractors throughout the United States and some foreign countries.

The McMillan heat pump operates on the water-to-air principle, using either city water or well water and is specially equipped so that the discharge water can be used for lawn sprinkling, thereby lessening water bills, it was pointed out.

"The package units will be complete with prefabricated ducts, insulation materials, and outlets, ready for quick installation," it was stated. One of the features is a copper coil six rows deep which greatly intensifies the dehumidification rate and increases the efficiency of operation.

"The refrigerant cycle and water coil are guaranteed for five years.

## Conditioning Added To Another Building At Oklahoma U.

NORMAN, Okla.—When work is completed about Aug. 1, the University of Oklahoma's administration building will become the sixth unit connected with OU's centrally located 1,000-ton air conditioning plant.

Chilled water air conditioning was added to the university library at the start of the summer term. It was first introduced on the campus in the student union building then was installed in the engineering auditorium, education building, Holmberg auditorium, and music practice building.

Heavily insulated 14-in. pipes carry 37° F. water through 1½ miles of tunnels.

"While the present equipment will handle some further expansion," said Walter Kraft, maintenance director, "any great extension of air conditioning will call for adding another of the \$100,000 chill air units."

## 12 Packaged Units Condition Hotel, Provide Individual Room Control

ANDERSON, S. C.—The John C. Calhoun hotel here has been fully air conditioned as well as remodeled, redecorated, and refurnished.

Chrysler Airtemp packaged air conditioning units have been installed on the mezzanine, in the lobby, dining room, banquet hall, and on each floor. Mezzanine and lobby are controlled from one zone, dining room and ball room are individually zoned, and each floor with its own concealed unit provides separate controls for each of the guest rooms.

All units on the upper floors are concealed as is the overhead ductwork which runs along the hallway ceilings. Hallway ceilings were dropped slightly period. Throughout the instal-

and acoustical tile used as a covering. This construction gives the hallways an entirely new and modern look, it was pointed out.

The mezzanine unit is recessed in the wall near the dining room entrance, protruding from the wall only about 4 in. It has a soft gray baked enamel finish, blending well with the coloring of the wall and draperies.

In speaking of the air conditioning of the hotel, Roy L. Crawford, manager, stated: "We feel this is the biggest single improvement we have made."

Crawford said the installation "was effected in record time. We didn't believe that it could be done in so short a period. Throughout the instal-



VIEW OF THE LOBBY and mezzanine of the Hotel Calhoun. The Chrysler Airtemp air conditioning unit which serves this zone may be seen recessed in wall at the far right.

lation there was a minimum of hotels in the Stiles chain. inconvenience occasioned our The Calhoun 87-ton cooling system was engineered and installed by the S. T. King & Co., Inc., of Anderson. The system consists of one 11-ton, four 5-ton, and seven 8-ton packaged air conditioners.



Hotel Washington	District of Columbia
Hotel Claypool	Indianapolis, Indiana
Hotel Stephen F. Austin	Austin, Texas
Hotel Cortez	El Paso, Texas
Hotel Buccaneer	Galveston, Texas
Hotel Galvez	Galveston, Texas
Hotel Jean Lafitte	Galveston, Texas
Hotel Lubbock	Lubbock, Texas
Hotel Falls	Marlin, Texas
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*Hotel Thomas Jefferson	Birmingham, Alabama
*Hotel Paxton	Omaha, Nebraska

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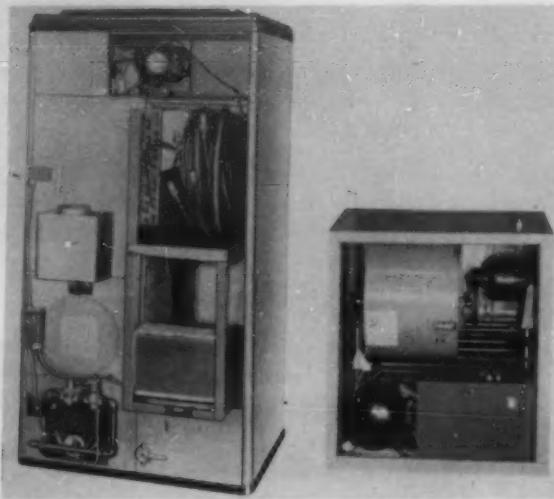
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### Olsen Announces Year-Round System

#### —KEY NO. E-810—

ELYRIA, Ohio—A "Luxaire" counterflow year-round air conditioner, which discharges the flow of both chilled air for summer cooling and warm air for winter heating downward from the bottom of the unit, has been announced by The C. A. Olsen Mfg. Co. here.

The new unit has been designed for installation in the utility room or a closet of a home without basement, and to be used with perimeter air distribution systems.

In this unit, the cooling coil is installed in a vertical position within the furnace cabinet.

"Vertical placement of the cooling coil provides efficient drainage of condensate water away from the cooling coil and prevents re-

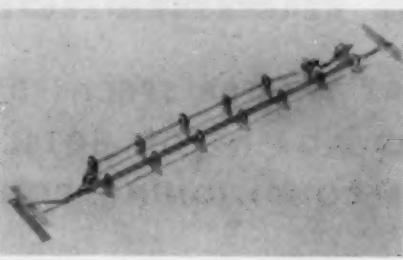
distribution of moisture into air ducts and to living areas," the company said.

A choice of a 2-ton-capacity, hermetically-sealed, air cooled, remote-type refrigerant circuit, or water-cooled refrigerant circuit is provided in combination with 100,000-B.t.u.-input gas or oil heating.

When the unit is equipped for water condensing cooling, the entire refrigerant circuit is installed within the furnace cabinet.

When equipped for air condensing cooling, only the cooling coil is installed within the furnace cabinet; a separate assembly of two compressors and condensers, and the condenser blower is installed in its own cabinet.

"Charging with 'Freon' and hermetic sealing of both sections of the divided, air-cooled refrigerant system at the factory is accomplished through the use of special 'Herma-Seal' refrigerant line couplings," the company explained.



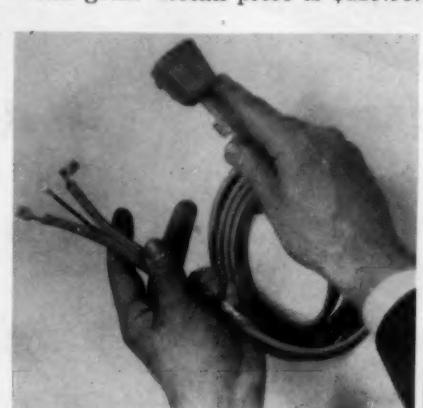
### Dehumidifier Has Swivel-Type Casters

#### —KEY NO. E-812—

CHICAGO—Swivel-type casters make this electric dehumidifier a portable unit.

A product of Cory Corp., the Fresh'n'd-Aire room dehumidifier features a  $\frac{1}{6}$ -hp. compressor claimed to give increased efficiency at lower operating cost.

Unit is finished in grey-green furniture steel and has an easy-to-clean grill. Retail price is \$129.95.



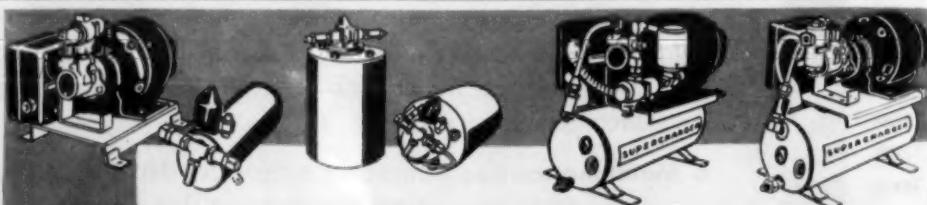
### Flexible Cord Set Is for Room Units

#### —KEY NO. E-813—

BRIDGEPORT, Conn.—A flexible cord set for room air conditioners has been developed by the Accessory Equipment Dept. of the General Electric Co. here.

Made of flexible thermoplastic insulating material, the new cord set will allow sharper bending than has heretofore been possible with heavy, jacketed cords, the company said.

The new cord set differs from the rip-cord type in that the green grounding conductor is nested between the other two conductors. When the cord is ripped, the green conductor becomes exposed.



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### Howard Offers 2-Door Combination

#### —KEY NO. E-814—

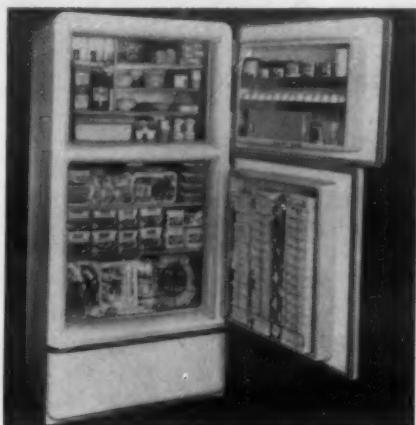
PHILADELPHIA—Featuring a 6-cu. ft. automatic defrost refrigerator over a 9-cu. ft. separately controlled freezer, a combination two-door unit was introduced by Howard Refrigerator Co. recently.

Occupying 5 sq. ft. of floor space, the unit is labeled the 69-W by the company.

The refrigerator section contains a large vegetable crisper, removable racks, and a door section with removable egg rack and sliding-door dairy bar.

The freezer section holds more than 350 lbs. of foods. It features a self-serving dispenser for frozen food and juice packages in the door.

Each section is separately controlled for temperature. Both sections operate off one Kelvinator power unit. Doors are equipped in pastel shades.



with trigger action latches and built-in key-locking facilities.

Interior of both sections is embossed aluminum. Exterior is white enamel finish. Door trim and plastic interior door backs are colored in pastel shades.



"Complete line, the perfect set-up for every need," says Clyde L. Copp (left), Typhoon dealer in Tulsa, shown with one of his customers.

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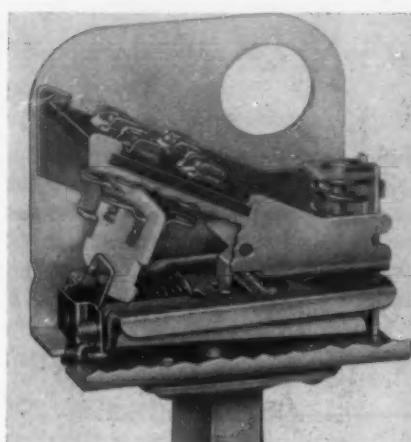
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### Sq. D Offers Low-Cost Water Pump Switch

—KEY NO. E-815—

MILWAUKEE—Square D Co. has recently announced a newly-designed, low-cost water pump switch.

Identified as a Class 9013, Type JSG, the new device is ideal for shallow well water systems involving pressures up to 60 p.s.i., it was stated.

This new switch is said to save money in three ways.

"First, initial low cost," the company said.

"Second, reduction in costly installation time because of generous wiring space, slip-on cover with no screws to tighten, and simplified wiring in either horizontal or vertical position.

"Third, low maintenance cost due to rugged, corrosion resistant parts.

"Easily replaceable contacts are double break, silver-to-silver, visible.

They are self-cleaning. A nylon impregnated diaphragm also guarantees longer life," say Square D engineers.

### Step-Starter Reduces Home Light Flicker

—KEY NO. E-816—

SCHENECTADY, N. Y.—A new step-starting accessory for air conditioners, which reduces light flicker in house lighting circuits, has been announced by the General Electric Co.'s General Purpose Control Dept.

The new starter reduces starting currents by approximately 50% and saves on extra costs of heavier lines and transformers ordinarily required with full-voltage starting, according to G-E engineers.

After temporary power failures, due to lightning or other causes, the step starter will hold an air conditioning load to half its normal inrush current for several seconds.

This allows other motor loads such as a refrigerator, washer, and fans to restart before the full air conditioning load comes on the line.

An increment-type device, the step starter is mounted as an external accessory and consists of a contractor, timing relay, and resistor.

In the first step of operation, the resistor is in series with the motor for approximately two seconds, limiting inrush current by one half.

After that interval, the timing relay shorts out the resistor, giving a second increase in current, which diminishes as the motor gains speed.

Available in two ratings, the step starting accessory can be connected with the built-in starter for 3 and 5-hp. single-phase air conditioning units, according to the manufacturer.

### Lunch-O-Mat Vends Hot, Cold Drinks, Sandwiches



—KEY NO. E-817—

NEW BEDFORD, Mass.—A refrigerated vending machine that vends four types of hot sandwiches, cold sandwiches, four types of fruit juices or soft drinks, pastries, hot coffee, white milk, and chocolate milk is now being produced by Eastern Electric, Inc. here.

Called "Lunch-O-Mat," it stands 6 ft. high and is 57 in. wide. Refrigerated circulated air keeps all foods in the machine refrigerator fresh.

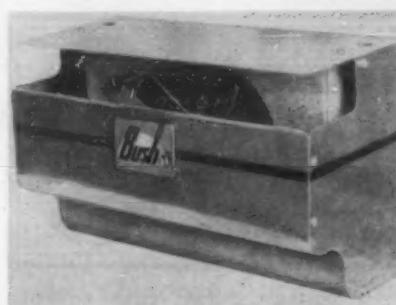
Each vending section is controlled by a separate coin mechanism, allowing several persons to purchase simultaneously. A built-in change maker supplies the necessary change, according to the manufacturer.

Hot sandwiches are cooked in seconds in a "Radarange" oven.

Eastern Electric said that it acquired the manufacturing and sales rights to the vender in January, 1954.

Since that time it has been operating hand-made models in test locations and perfecting the mechanical aspects of the machine, the company explained.

It is believed by the manufacturer that a market for the new refrigerated vending machine will be found in railroads, bus depots, factories, motels, and department stores.



### Bush 'Jet-Flo' Cooler Has Smaller Coil

—KEY NO. E-818—

W. HARTFORD, Conn.—Bush Mfg. Co. has introduced a new series of unit coolers with stainless steel cases and non-ferrous construction.

The new "JF" "Jet-Flo" units feature "Inner-Fin" coil construction, patented Bush development which permits a smaller coil. Air direction can be either suck-through or blow-through. To accomplish this, an extra fan is recessed sealing gasket can't slip or fall out.

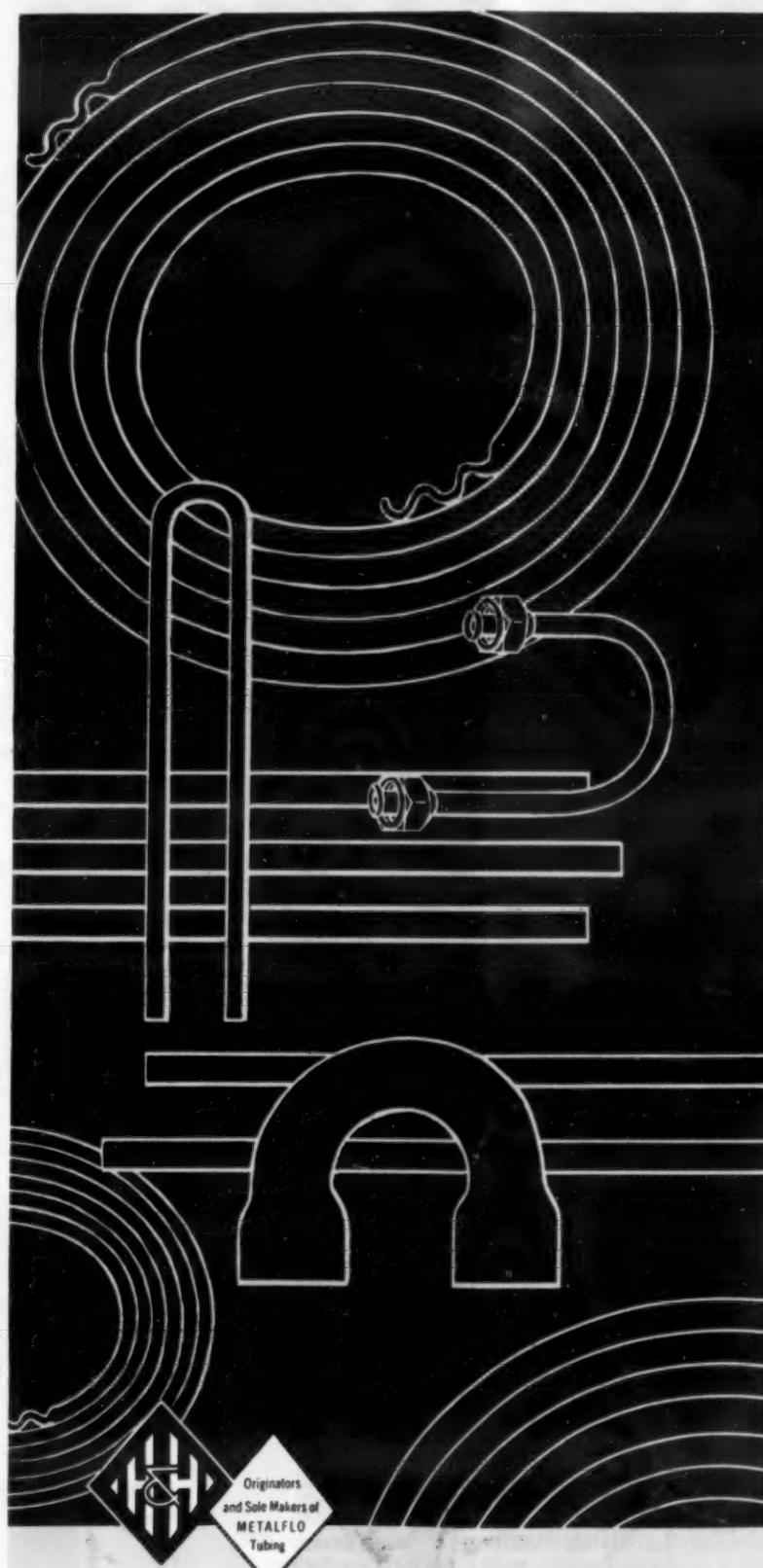
### Madden Port Valve Pierces 4 Tube Sizes

AURORA, Ill.—A new 4-in-1 hermetic port valve that will pierce four sizes of tubing was announced recently by the Madden Brass Products Co. here.

The valve will pierce  $\frac{1}{16}$ ,  $\frac{1}{8}$ ,  $\frac{5}{16}$ , and  $\frac{3}{8}$ -in. tubing for testing, charging, or purging.

Called the HP-41 valve, it is made from extruded brass bar and is only 2 in. high. Tube is automatically centered and special Madden engineering gives it added support at the tightening point.

The company claims that the tightening nut cannot score or collapse the tube, normal wrench torque can't strip threads, and the recessed sealing gasket can't slip or fall out.



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big air conditioning and refrigeration season coming up. Furnishing us with specifications now will give us the opportunity not only to study your needs thoroughly, but perhaps to develop and suggest new and better ways to achieve the same results—faster, and possibly for less money. There's an H & H representative near you. Why not discuss your next year's needs with him—today?

H & H refrigeration tubing is available in sizes from  $\frac{1}{8}$ " O.D. to and including  $\frac{3}{4}$ " O.D., in straight lengths or coils. It is bright, clean and dehydrated.

## Refrigeration Problems And Their Solution

By Paul Reed  
For Service and Installation Engineers



### More on 95-5 Solder (1)

In the April 12 and 19, 1954 issues of this column, the use of 95-5 solder was discussed. 95-5 is a soft solder that melts at 450° F. and flows freely at 465° F.; and is composed of 95% tin and 5% antimony. Because of its low melting point, it can be worked with any torch, or even an iron, without heating the copper lines or fittings to a luminous heat necessary for silver alloy brazing.

In those issues, this column called attention to the excellent properties of 95-5 as a solder, and attempted to dispel some popular misconceptions about it, one of which is that it will not stand low temperatures.

Apparently, this misconception arose from the fact that pure tin powders and deteriorates if subjected to the below-freezing temperatures in refrigeration work. However, tin alloyed with even as little as 1/2% antimony is unaffected by refrigeration temperatures.

The difficulties encountered with the use of 95-5 are traceable to causes other than the

solder itself. Chief among the causes of trouble are: the use of an acid flux, either liquid or paste; too-great clearance between the tube and fitting; metal in the joint not well cleaned; improper heating of the joint.

Some weeks ago, we received a letter from a reader whom we have known for some time. He is in charge of installation, service, and maintenance of a company who owns and uses a large number of commercial and air conditioning installations. His department has been outstanding in its efficient and economical operation, and this writer has high regard for this man's ability, and great respect for his opinions. On the subject of 95-5 solder, however, we do not quite see eye-to-eye.

#### READER SENDS FOUR 95-5 JOINTS

With his letter, he sent a

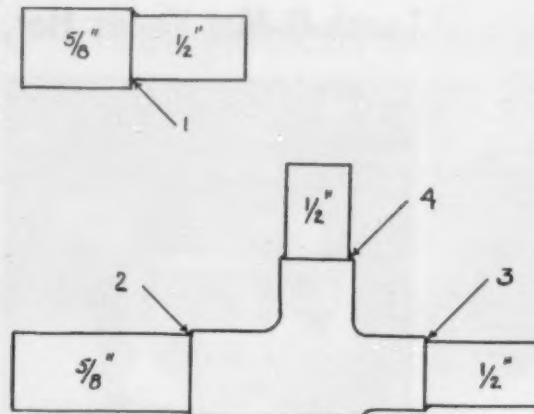


FIG. 1—Sweat tee with hard copper tubes soldered with 95-5 solder.

and a 5/8-in. by 1/2-in. by 1/2-in. that we have used nothing but wrought copper tee removed from an installation with the years has made examples of 95-5 failure hard to find except in my souvenir box that extends back about 18 years.

"I wanted to show you some samples of the worm-holding effect in 95-5 solder when exposed to alternate freezing and thawing conditions on defrosting cycle systems in a minimum period of two years. The fact

5/8-in. by 1/2-in. (No. 1 in Fig. 1) swaged coupling here-with came from the souvenir box and is a factory made end joint on evaporator coil used in meat case on defrosting cycle system. Little bubbles around outer end of joint show that channeling is progressing in joint. Judging by experience, I would say joint was used three years.

"5/8-in. by 1/2-in. by 1/2-in. tee was lately removed from system after 14 years' use between two closed single duty meat cases in suction line on defrosting cycle job. Tee was located outside fixture but about five feet from thermo valve bulb so that it probably was subjected to freeze-thaw cycle on occasions of brief flooding which happened less frequently than did the machine cycle.

"On 1/2-in. side joint (No. 4 in Fig. 1), 95-5 is channeled not only at rim of joint but also on exterior surface of tee.

"1/2-in. end (No. 3 in Fig. 1) has channeled and later admitted condensate to blister tube end inward and cause system to leak.

"5/8-in. end (No. 2 in Fig. 1) had large puddle of solder on tube exterior. Much of this had disintegrated into gray mud which fell off in handling. If this joint is 95-5 as I think it is, it is the first example of this effect I have ever seen.

"Following your reasoning, impurities in joint may be responsible for these failures, but under specific conditions, I believe 95-5 can fail more often than generally believed to occur."

There was some question in our mind as to: (1) whether the

(Continued on next page)

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## More on 95-5 Solder--

(Continued from preceding page)

solder was 95-5 or some lead base solder such as 50-50; (2) whether an acid flux or a non-acid flux had been used; (3) the clearance between the tube and fitting; and (4) the general quality of workmanship.

### SAMPLES SENT TO LABORATORY

We sent these fittings to our friend Dr. W. O. Walker, Dean of the Division of Research and Industry, of the University of Miami, Coral Gables, Fla. Dr. Walker's Division has very well equipped and ably staffed laboratories in which they do research in many fields for manufacturers or other organizations who either lack adequate facilities or wish to supplement their own laboratory work.

The findings at the University of Miami laboratories were quite complete and detailed, but are abstracted as follows:

(1) Tin and antimony were found in all four joints, indicating that the solder used was 95-5. However, lead was also found in joint No. 2, indicating that 50-50 or some similar lead base solder had been used in addition to the 95-5, probably in attempting to repair a leak that developed in the original 95-5 joint.

(2) In each of the four joints, small voids or pockets were found to contain muriatic acid. This indicates that the flux used was a corrosive acid flux, instead of a rosin flux or other non-corrosive type, as is recommended for 95-5 solder. It is therefore not surprising that leaks developed in these joints. Indeed, it is somewhat surprising that leaks did not develop in less than 14 years.

It is practically impossible to "boil-out" all of the flux from a soldered joint, and if it is an acid flux, it will eventually eat little cavities in the solder. These will grow until finally they extend to the inner and

outer surfaces of the solder and form channels of leakage of refrigerant.

(3) Joint No. 1, the swedged joint, appeared neat and clearance between the tube about right. However, the clearances between the tubing and the tee were excessive. This contributes to a weak joint and makes it almost impossible for the solderer to make a good strong, workmanlike sweat joint.

In purchasing sweat fittings and hard copper tube, the fit and clearance should be checked. The tube should just slip into the fitting, with a clearance of between three to six thousandths; not a forced fit, but definitely not a wobbly or "sloppy" fit. A loose fit is sufficient cause for rejection of either the fittings or the tubing, for a satisfactory soldered joint cannot be made unless the fitting and tubing fit snugly, without excessive clearance.

(4) The interior surfaces were not fully tinned, indicating that they had not been properly cleaned or heated. The swedged joint appeared to have been well made and would probably have been successful but for the use of the acid flux. However, the workmanship on the joints of the tee indicated a lack of skill in soldering.

The following very pertinent observation was included in the report.

"It is probable that the joints were not good originally, and that they were acceptable only because they did not leak." A poorly made soldered joint may not leak at first, but the weaknesses show up in time.

(To Be Continued)

### Charter Tulsa Firm

TULSA, Okla.—Blessing Heating & Air Conditioning Service, Inc. here has been granted a charter, with \$10,000 capital stock. Term of existence 50 years. Incorporators are C. E. Blessing, Ammon Jones, Jr., and Betty Lou Blessing, all of Tulsa.

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## Airo Supply Co. Course Emphasizes Faster, More Accurate Calculating, Estimating

CHICAGO—Airo Supply Co., local wholesaler, reports that it recently completed a very successful ten weeks' course in application engineering and estimating—prepared especially for Chicago area contractors and sales executives.

Company officials state that the course puts emphasis on the professional approach to faster, more accurate calculating and estimating, thereby increasing the sales potential and the profit margin on installations.

The ten lecture sessions were conducted by Ion Caloger, recognized locally as one of the outstanding men in the field. They consisted of the following material:

General refresher on principles; fundamentals of heating and cooling calculations; medium temperature commercial applications; low temperature

commercial applications; commercial applications of air conditioning (two sessions); residential air conditioning—room coolers; residential central heating and cooling; residential central heating, cooling, and duct work; heat pump and reverse cycle applied to air conditioning.

Throughout the lectures, Caloger demonstrated the direct relationship between intelligent, accurate planning and closing sales.

Based on the excellent response of participants, the company plans to re-open the course early in the fall. Classes will again be conducted in cooperation with Utilities Engineering Institute of Chicago.

Those interested in complete information should contact Airo Supply Co., 2732 N. Ashland Ave., Chicago.

## 'LaCo' Non-Acid Flux Comes In 2-Oz. Cans

CHICAGO—A small 2-oz. can of "LaCo" non-acid flux for occasional users has been announced by the Lake Chemical Co. here.

The self-cleaning flux can be used with 40-60, 50-50, 60-40, and 95-5 solders, the company said. It automatically prepares the metal for instant alloying with the solder because the flux, when heated, flows by capillary action through surface oil film and disperses any metal oxides that may be present, the manufacturer explained.

Attraction of the solder for metal forces the flux from the metal leaving no residue and resulting in tight joints. No wire brushing or sanding is necessary.

As the flux is non-acid, it will not harm workers or clothing nor stain nor pit metals. It can be used on oxygen pipes and on vessel and containers in the food and dairy industries.

### Compound Is Highly Resistant to Refrigerants

GOSHEN, Ind.—A compound highly resistant to refrigerants for fabrication of seals and mechanical parts has been announced recently by Goshen Rubber Co.

Called Compound 1242, it has such physical properties as high tensile and elongation and very low compression set. Swelling and volume change in refrigerants is limited, the company said.

The manufacturer declared that it has a high resistance to "Freons" 12, 13, 22, 31, 32, 114, 115, and 218; C-316 and C-318; butane; pentane; propane; methyl chloride; and methylene chloride.

## 'Kinetic' Shifts Seely and Waller

WILMINGTON, Del.—Samuel N. Seely has been named sales supervisor of the "Kinetic" Chemicals Div. in the Los Angeles district of the du Pont Co.'s organic chemicals department.

Succeeding him as manager of the "Kinetic" Chemicals export sales section here is Leonard Waller, who for most of the last seven years has been a technical representative of the to whom Seely will report.

Assignment of Seely to the west coast is the first major personnel change involved in the "Kinetic" Div.'s establishment of a district office there.

The Los Angeles district office will continue under the direct supervision of A. J. Mease, district manager of du Pont's Organic Chemicals Dept., to whom Seely will report.

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for all automatic defrosting  
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**"de-frost-it" with  
remote control**

Here's refrigeration protection at its best — with a nice profit for you! Saves customers worry about costly food spoilage... ends guessing and call-backs for re-setting.

Key to 100% fail-safe defrosting of any low temperature or normal temperature system is the built-in 45-minute termination dial. If the pressure switch is not actuated for some reason,

a pin on the dial automatically terminates the defrost cycle. Action is positive, sure! Guards against low ambient, gas shortage or inoperative condenser. Protects against failure of pressure/temperature cut-in switch or improper defrosting. Install a TPT "de-frost-it" on your next job. Order from your Refrigeration Equipment Wholesaler or write Dept. 1687 for Bulletin.

**AUTOMATICALLY COMPENSATES DEFROST TO LOAD AND ATMOSPHERIC CONDITIONS**

Once set, length of defrost period is 100% self-adjusting. Seasonal weather changes have no effect. Two models available: TPT 303 (hot gas) and TPT 305 (electric heat). Both units are remotely controlled by pressure switch or thermostat. Set for 1 to 8 defrost cycles per day.

**One more  
Paragon profit  
opportunity!**

**PARAGON ELECTRIC COMPANY**

TWO RIVERS, WISCONSIN  
WORLD'S FOREMOST MANUFACTURER OF TIME CONTROLS

## Air Conditioned Combine Could Revolutionize Rice Farming

KATY, Texas—At rice harvest time last year, neighbors would stop their cars when they passed the Cardiff brothers farm five miles south of Katy, Texas.

To the untrained eye, there was nothing unusual about the four combines working across the field. But the neighbor mopping his brow in the hot September sun knew that a near revolution in rice farming was in the making.

Because, in one of the sultriest, hottest types of farming known, the day of the air conditioned combine had dawned and the Cardiff brothers had quickened its arrival.

Just like the plastic tubes at the sides of a car's rear window are a signal that it is air conditioned, the closed cab may come



CARDIFFS' air conditioned combine stands out like a sore thumb out in the field. John stands on the ground discussing harvesting operations with brother Charles.

to signify a cooled combine.

The driver's position of the average rice combine is open to harvester-thresher, with the elements. It usually consists of the usual pedals and levers, a steering wheel, and a seat for



CHARLES CARDIFF is pictured starting motor of his air conditioned combine. Two-ton Chrysler Airtemp unit is directly behind the seat. Door slides shut for tight closure.

the driver, with the motor directly behind. That's why this driver enclosed in aluminum and glass, stands out so prominently. The brothers feel that the

improvement is more than a measure of comfort. Because, they say, it increases a man's efficiency and ups the amount of work he can do.

To hear the oldest brother, Charles Cardiff, talk, you would think that the air conditioning project was the simplest thing in the world. "We just talked about it for a while, drew a sketch, and all pitched in."

The sketch was made in soapstone on the floor of the Cardiffs' well-equipped shop. It stayed there until the job was completed.

The air conditioning unit, mounted just behind the seat so that it is next to the motor, is a 2-ton Chrysler Airtemp. The Cardiffs had previously used it to cool the office of the barn.

The aluminum used was in sheet form. A sliding door assures the best possible closure.

The air conditioner does its job well, Cardiff states. Cab temperature is 20° F. lower than outside, an important difference in a climate where the temperature in the harvest season ranges upward from 90°.

## Austin Bank Gets 215 Tons of Cooling With 22 Zones

AUSTIN, Texas—The completely air conditioned American National Bank here is cooled by three 60-hp. Worthington "Freon-22" condensing units and three Worthington packaged air conditioners, which collectively are capable of producing 215 tons of cooling, it was reported recently.

General design of the system is based on the use of chilled water for cooling, with an automatic changeover to air cooling when cooling inside the bank is still required with 50 to 60° outside temperature.

Because of the variations in occupancy, lighting, and exposure in different portions of the building, a method of zoning the air conditioning to 22 areas of the bank building was decided upon.

Each zone is equipped with its own thermostat to regulate the temperature in that particular area.

In the bank proper there are 12 zones; in the shops, arcade, and garage there are nine zones; and in the drive-in bank cages there is one zone.

The drive-in tellers' booths are cooled by a separate unit which conditions all outside air and a 55,000 c.f.m. exhaust blower keeps the drive-in area free from fumes.

Installation of the cooling system was engineered by Climate, Inc. of Austin, Worthington air conditioning and refrigeration equipment dealer.

### Cool Stock Sales Arena

MERCEDES, Texas—What is believed to be the only air conditioned stock sale arena in south Texas, if not the whole state, was opened recently at the Valley Stockyards here by the owners, Jake Hamilton and Chester Cotter.



Increase  
COOLING TOWER  
EFFICIENCY  
With  
**ASPIR-JET**

Aspir-Jet, the new spray nozzle, increases efficiency of cooling towers by increasing water break-up and improving water distribution. This is accomplished by the Aspir-Jet unique design which atomizes the water with as little as one-half pound nozzle pressure.

Formed of butyrate plastic, Aspir-Jets last longer because they do not corrode. Thousands already in use are giving better cooling even with lower than normal pressures.

Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: If you are not now using or stocking this outstanding new product, wire or write

**THERMAL AGENCY**  
National Sales Agents  
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**MARSH**  
**Instruments**

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services.

MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY

Sales Affiliate of Jas. P. Marsh Corporation

Dept. D, Skokie, Ill.

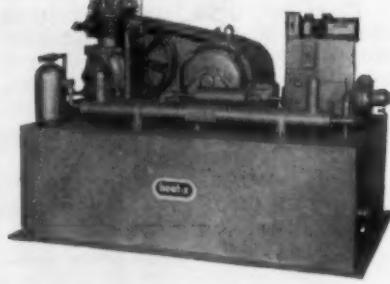


Heat-X 'PC' Units (above) provide the practical, space-saving answer to your water chilling needs . . . for air conditioning systems . . . drinking water or processing applications.

Inner-Fin construction of refrigerant passages, exclusive with Heat-X, permits a compactness impossible with old fashioned construction. Result: greater cooling capacity with far less bulk. Entirely self-contained, these package chillers are delivered completely wired, charged with Freon-12, ready to install. Only power and water connections are required. Available in 2 H.P. through 75 H.P. models.



'PCL' UNITS (left) are designed for those who prefer a chiller to which they can tie in their own condensing unit and water pump. Construction is the same as the 'PC' line.



'CCP' UNITS (right) are complete and ready to install, offer another method of packaged cooling. Combinations of cast aluminum coolers provide continuous chilled water, eliminate danger of freeze-up damage. Hermetic compressors carry 5 year warranty.

**HEAT-X, Inc.**  
BREWSTER • NEW YORK

For more information about products advertised on this page use Information Center, page 12.

## Irradiated Foods Not Commercially Usable, Study Finds

NEW YORK CITY—Sterilizing food by radiation, as a substitute for preserving by refrigeration, is not yet a commercial success, reports the Food Investigation Organization of the Department of Scientific and Industrial Research in London, England.

The organization has been conducting experiments in sterilization by irradiation for five years.

In its report, as related by the *New York Times*, the English scientists point out a number of disadvantages that have yet to be overcome.

These include:

Changes for the worse in flavor, color, and texture. These changes can be overcome but only by complicating the process and increasing the cost.

Deterioration in storage due to enzyme action. Enzymes, living catalysts that bring about chemical changes in the food, are not destroyed—nor should they be—along with microorganisms during irradiation.

Formation of harmful compounds by electronic bombardment of the food which may destroy its vitamins.

Destruction of vitamins and other food constituents, experiments with white mice have shown, retard growth, reduce activity, and increase the death rate.

## Tom Boy Supermarkets Set To Introduce Wax Coated Meats

ST. LOUIS—Wax coated refrigerated cuts of fresh meat will be offered in some 225 Tom Boy supermarkets in this area during August, reports Tom Boy President Clem Krekeler.

Dipped in a new plastic wax, the meat is said to stay fresher than by other methods of processing and packaging.

"We hope to save 20% on processing costs," Krekeler said.

## Kelvinator--

(Concluded from Page 1, Col. 3) against \$104,220,995 in the corresponding period a year ago, when Hudson results were included for only two months.

American Motors' net loss for the nine months ended June 30, 1955, was \$4,522,171 after a tax recovery of \$4,723,000. Sales for the nine months were \$348,052,916. Comparison with 1954 totals for the corresponding period is not feasible because Hudson totals were included only for the two months after the merger.

## Fast Delivery COILS

TOP QUALITY  
EVAPORATOR  
CONDENSER  
WATER STEAM  
1 TO 50 TONS 2 TO 8 ROWS

**Tubenfin COIL CO.**  
8035 HARTFORD, HOUSTON 17, TEXAS

## Pilot Dogs, Inc. Building To Be Air Conditioned

COLUMBUS, Ohio—A new air conditioned building in which to train blind students and their guide dogs will be built here by Pilot Dogs, Inc.

Construction is expected to start in August on the structure, which will triple the facilities presently available to the organization. When completed, the \$200,000 building will permit training of 14 students and their dogs per month.

Both students and dogs will be housed there during their training. Facilities will be provided so that they can remain together constantly, according to Charles W. Medick, president of the organization.

Training is without charge and the dogs are presented to the students as gifts. More than 150 blind persons have been trained by the organization since its founding in 1950.

## General Controls Names

### Barr Boston Manager

GLENDALE, Calif.—Richard W. C. Barr has been appointed manager of the Boston branch for General Controls Co. It was announced by J. F. Ray, who is vice president in charge of sales.

Barr comes to General Controls from the White-Rodgers Electric Co., Inc. where he served as a sales correspondent, which included the responsibility for all internal sales derived from midwestern areas, liaison between field sales force and engineering, and development of records which improved coordination between production and sales.

## Consumer Credit--

(Concluded from Page 1, Col. 4) has sent similar notices to 1,900 state banks that belong to the Federal Reserve System.

George M. Humphrey, U. S. Secretary of the Treasury has publicly urged businessmen and individuals to be "prudent" in money matters.

Gidney said that his letter was not a request for credit curtailment. Rather, he said, it was advice to "do all the consumer loan business you can, but be sure you do it sensibly."

## Fedders Names--

(Concluded from Page 1, Col. 3)

search and development. In 1949 he became general manager of Fedders' Buffalo Div. and in 1953 was appointed a vice president of the corporation.

As former president and current member of the board of directors of the Air-Conditioning & Refrigeration Institute, De Fino has been active in his field. He is also a member of the American Society of Refrigerating Engineers, and other groups.

De Fino will soon relocate to the company's executive offices in Maspeth, N. Y. This is in keeping with the recently announced Fedders' policy of centralization of top executives.

## Evans Engineering Handles Dryomatic

## Westinghouse--

(Concluded from Page 1, Col. 4)

H. F. Hildreth, manager of refrigeration specialties, described sales of Westinghouse room air conditioners last year as highly encouraging and above company expectations despite a poor industry season.

The equipment program for room air conditioners comprises the second of three phases of an expansion program at this New England plant. The first completed in March provided for enlargement and modernization of facilities for the production of fans, food mixers, and vacuum cleaners. A third program provides for greater output of soft drink dispensers, dehumidifiers, and water coolers.



**"Nothing is more refreshing than sparkling ice . . . the more it sparkles . . . the more it refreshes"**

The only way to make pure, sparkling ice is with clean, properly functioning equipment. However, most cube or flake ice machines accumulate impurities from the water supply and from the air that will form deposits of slime, scale and dirt. These contaminants ruin operating efficiencies and cause such common ice troubles as opaque ice, cube lock, slow freezing and offensive odors and taste.

A safe, sure way of removing these deposits, promptly and without injury to the machines or the persons cleaning them, is to use **CSCO ICE MACHINE CLEANER POWDER**. It is packed in individual 8 oz. plastic bags. The contents of one bag dissolved in the water tray or freezing compartment and allowed to circulate cures the trouble in 20 to 30 minutes. No long shut-down is required. The ice machine need not be dismounted.

And the powder is not harmful from a health standpoint when used as directed.

Ice machines cleaned with **CSCO ICE MACHINE CLEANER POWDER** produce a maximum amount of pure, healthful ice. For harder, clearer ice—that sparkles like a diamond—clean your ice machine regularly with **ICE MACHINE CLEANER POWDER**.

Ask your wholesaler for this fine CSCO product or write—

**Chemical SOLVENT COMPANY**  
P.O. BOX 487 - BIRMINGHAM, ALA.

## RANCO EXACT RELAY REPLACEMENTS

Choice of the correct relay is easy when you bank on Ranco. Ranco's line of motor relays is the most complete in the industry . . . features the right relay for the specific installation at hand.

You eliminate "searching" time, you complete the job quickly on the initial call, and you make a handsome profit when your first stop is your Ranco wholesaler. Install Ranco Relays . . . to be sure.

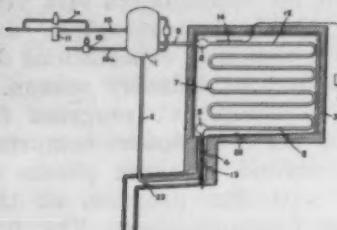
**Ranco Inc.**  
COLUMBUS 1, OHIO



WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS

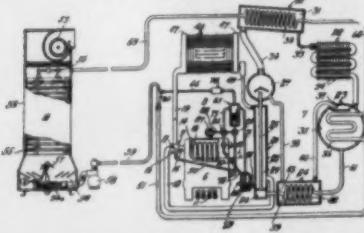
## Week of May 31

2,709,345. METHOD AND APPARATUS FOR DEFROSTING REFRIGERATION COILS. Melvin A. Ramsey, Alendale, N. J., assignor to Worthington Corp., Harrison, N. J., a corporation of Delaware.



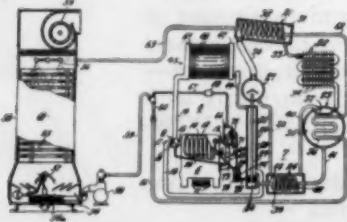
3. In a refrigerating system including an evaporator through which refrigerant flows, a heater for heating the refrigerant prior to its entrance into the evaporator to cause heating of the evaporator from the inside outwardly to melt accumulated frost from the evaporator, a housing enclosing said evaporator having a drain passageway for the melted frost from the evaporator, said heater disposed in said drain passageway to prevent clogging thereof by re-freezing of the melted frost from the evaporator.

2,709,346. GENERATOR CONDENSATE LIFT IN ABSORPTION REFRIGERATION APPARATUS. Harry C. Shagaloff, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Nov. 2, 1951, Serial No. 254,530. 13 Claims. (Cl. 62-119.)



1. In combination with a heat operated refrigeration system having a heating chamber and a heat rejecting element, conduit means for flowing cooling water in heat exchange with the heat rejecting element, a boiler for producing vapor for the heating chamber and flue gas for treating the cooling water, and apparatus connected to the boiler, heating chamber and conduit means and operated by the flow of cooling water in the latter to produce a force for simultaneously injecting flue gas into the water and returning condensate from the heating chamber to the boiler.

2,709,347. HEAT OPERATED REFRIGERATION APPARATUS HAVING DEVICE UTILIZING FLUE GAS FOR RETURNING CONDENSATE. Walter M. Simpson, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application March 1, 1952, Serial No. 274,318. 3 Claims. (Cl. 62-119.)



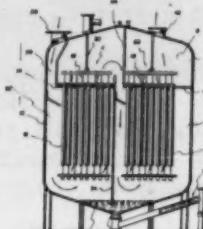
1. In a heat operated refrigeration system having a heat receiving element, a heat rejecting element, means for flowing cooling water in heat exchange with the heat rejecting element and a boiler for producing vapor for heating the heat receiving element, the combination with the elements of said system of apparatus utilizing the flow of cooling water for simultaneously returning condensate from the heat receiving element to the boiler and treating the cooling water with flue gas consisting of a standpipe extending above the liquid level in said boiler, a sump connected to receive condensate from the heat receiving element and flue gas from the boiler, a vapor liquid-lift connecting the sump and standpipe, an aspirator in the means for flowing cooling water and connected to the standpipe adjacent the top thereof, and a single valve in the standpipe having a movable element automatically operated by a differential force at opposite sides of the element.

2,709,497. ELECTRICAL PRECIPITATOR. Joseph Phyl, Fanwood, N. J., assignor to Research Corp., New York, N. Y., a corporation of New York. Application Feb. 4, 1954, Serial No. 408,114. 2 Claims. (Cl. 183-7.)

2. An electrical precipitator comprising a shell, a bank of vertical pipe collecting electrodes and associated discharge electrodes, a horizontally disposed header plate in said shell supporting said bank of collecting electrodes, a second bank of vertical pipe collecting electrodes and associated discharge electrodes, a second horizontally disposed header plate in said shell supporting said second bank of collecting electrodes, a common sump in said shell below said banks of collecting electrodes for receiving liquid from said electrodes, outlet means maintaining a predetermined liquid level in said sump, a vertical partition member between said banks of collecting electrodes extending below said liquid level at the bottom end thereof and cooperating with said header plate to define an inlet plenum chamber in said shell around said bank of collecting electrodes below said header plate, a second vertical partition member extending above said second header plate and cooperating therewith to define an outlet plenum chamber in said shell above the second bank of collecting electrodes, gas inlet means in the top of the shell and communicating with said inlet plenum chamber, a gas

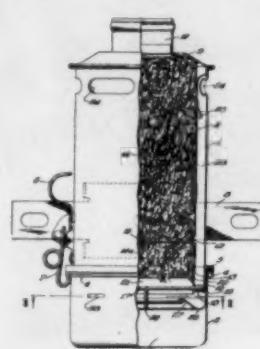
collecting electrodes, a common sump in said shell below said banks of collecting electrodes for receiving liquid from said electrodes, outlet means maintaining a predetermined liquid level in said sump, a vertical partition member between said banks of collecting electrodes extending below said liquid level at the bottom end thereof and cooperating with said header plate to define an inlet plenum chamber in said shell around said bank of collecting electrodes below said header plate, a second vertical partition member extending above said second header plate and cooperating therewith to define an outlet plenum chamber in said shell above the second bank of collecting electrodes, gas inlet means in the top of the shell and communicating with said inlet plenum chamber, a gas

2,709,334. HOT-GAS RECIPROCATING ENGINE AND REFRIGERATOR OR HEAT PUMP OPERATING ON THE REVERSED HOT-GAS RECIPROCATING ENGINE PRINCIPLE. Adriani Jan Jurriaan Lambeek, Dordrecht, Netherlands, assignor to Hartford National Bank and Trust Co., Hartford, Conn., as trustee.



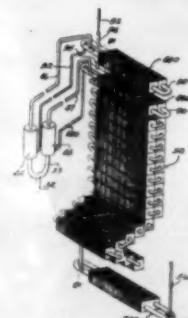
passage between said head plates from above the inlet plenum chamber into space below the outlet plenum chamber, and gas outlet means in the top of the shell and communicating with the outlet plenum chamber above said second bank of collecting electrodes whereby a stream of gas entering the gas inlet means is caused to pass upward through the collecting electrodes of each of the banks in series.

2,709,498. AIR CLEANER ASSEMBLY. Joseph B. Sebok, Detroit, Mich., assignor to Houdaille-Hershey Corp., Detroit, Mich., a corporation of Michigan. Application Feb. 18, 1952, Serial No. 272,153. 5 Claims. (Cl. 183-15.)

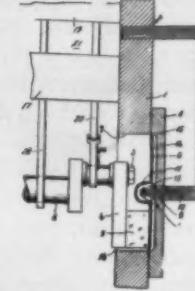


1. In a liquid bath air cleaner, a casing having separated inlet and outlet openings and comprising separable sections of which the lower contains a liquid sump, a filter holding shell in said casing through which air traveling through the cleaner must pass, said shell being of less diameter than said casing to define a path therebetween for incoming air leading towards said sump, filter means in said shell above said sump, a centrally open annular and transversely curvate baffle adjacent said sump below said air path, and tongues struck inwardly and upwardly from the lower pall portion of said shell to guide air and cleansing liquid driven by back pressure outwardly and downwardly toward said baffle.

2,709,575. METHOD AND APPARATUS FOR HEAT EXCHANGE. Clarence T. Sorenson, Lakewood, Ohio, assignor of twelve and one-half per cent to L. S. McLeod, Evanston, Ill., ten per cent to W. H. Kendall, Cleveland, Ohio, five per cent to P. W. Lewis, and five per cent to W. W. Lorch, both of St. Louis, Mo. Original application Nov. 13, 1946, Serial No. 709,519, now Patent No. 2,535,431, dated Oct. 10, 1950. Divided and this application Nov. 18, 1949, Serial No. 131,643. 9 Claims. (Cl. 257-1.)

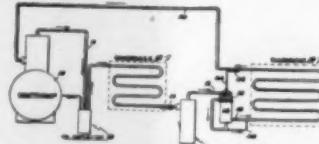


1. A method of heat exchange with a first fluid confined for circulation in a predetermined closed path which comprises introducing and commingling with the first fluid, a second fluid with which it is materially immiscible, circulating both fluids together along a portion of said closed path, separating said fluids after heat exchange has occurred between them, moving the second fluid in a closed circuit upon which it is returned to said path for further commingling with the first fluid, and restoring the first fluid toward its original temperature by subjecting it to additional heat exchange after said separation and during movement in said closed circuit.



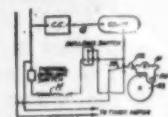
1. A hot-gas reciprocating engine or a refrigerator or heat pump operating on the reversed hot-gas reciprocating engine principle, comprising a crank case having a cylindrical aperture therein, a crank shaft in said crank case, means to supply supplementary working medium from the crank case to the working space in which the cycle is performed, a screened space in direct communication with the crank case having small transverse dimensions compared with its radial dimensions, said screened space during the operation of said engine having a centrifugal force set up therein by the rotation of the crank shaft, and a duct for supplying supplementary medium from the crank case to the working space and opening into the central part of the screened space.

2,709,340. REFRIGERATING SYSTEM WITH LOW TEMPERATURE STABILIZATION. Robert C. Webber, Indianapolis, Ind.



1. A system of the class described comprising a compressor, a condenser, a first conduit means connecting said compressor to said condenser, an expansion valve, a second conduit means connecting said condenser to said expansion valve, an evaporator, a third conduit means connecting said expansion valve to said compressor through said evaporator, thermo-responsive means for actuating said expansion valve comprising means providing a chamber having a movable wall, means connecting said movable wall to actuate said valve, and a feeler bulb arranged in heat-exchanging relation with the refrigerant flowing from said evaporator, the interiors of said bulb and said chamber being in communication and filled with an expansible fluid, and means for preventing liquefaction of said expansible fluid comprising means providing a heat-exchanging relation between the refrigerant flowing in said second conduit and the fluid in said chamber, and means providing for a diminutive flow of refrigerant through the last-named means to said fourth conduit means during periods when said expansion valve is closed.

2,709,341. TIME SWITCH. William P. Gallagher, Anthony D. Stolle, and Paul G. Biolik, Chicago, Ill., assignors to International Register Co., Chicago, Ill., a corporation of Illinois. Application April 21, 1951, Serial No. 222,238. 15 Claims. (Cl. 62-4.)



9. In a refrigerator defrosting switch, the combination of a motor-driven cam having an annular track with an abrupt radial-offset, a switch arm mounted for movement between spaced contacts and coating to control the alternate operation of refrigerating mechanism and electrically heating defrosting means for the refrigerator, a stationary pivot adjacent to said motor-driven cam, a bell-crank rocker arm rotatably mounted on said pivot and normally urged to press a follower on said rocker arm to engage said cam track, resilient means so connecting said rocker arm to said switch arm that the opposite shifting of said rocker arm by said cam-track offset snaps the connections of said resilient means to said switch arm and to said rocker arm oppositely back and forth over a line through the axis of said rocker arm pivot and the mounting of said switch arm to effect a quick make and break of said switch arm with said contacts, and thermostatically-actuated means connected to said rocker arm and controlled by the temperature in the refrigerator for making the movement of said rocker arm in one direction temporarily independent of said cam offset for a variable interval of time which is governed solely by the refrigerator temperature independently of the relative movement of said cam.

(To Be Continued)

## Servicing Automobile Air Conditioners

BY C. DALE MERICLE

Another make of automobile air conditioner produced by an "independent" is that of Pivot Corp., which is discussed in this and succeeding instalments.

Makes previously described include those of A.R.A. Mfg. Co. in the issues of June 13, 20, and 27; Frigikar Corp., in the issues of July 4 and 11; and Automotive Air Conditioning, Inc., in the issues of July 18 and 25.

More makes of both the "independents" and automobile manufacturers themselves will be featured in future instalments in this series.

### Pivot - - 1

Pivot Corp.  
468 N. Bellevue  
Memphis 5, Tenn.

#### DESCRIPTION

Pivot air conditioning units can be installed in recent models of most passenger cars made in the U. S.

Major components of the Pivot system are located in the conventional manner. Compressor mounts on the car engine block. The condenser is installed in front of the car radiator. Evaporator-blower assembly is installed against the forward bulkhead of the trunk.

Pivot describes the refrigerant used as "dichlorodifluoromethane, which may be purchased under the trade names of 'Freon-12' and 'Genetron-12.'" Refrigerant charge is 5 lbs. of liquid refrigerant.

#### Compressor

For 1955 models of its air conditioner Pivot is using the Lehigh V-93 compressor and the Copeland 4AO. In 1954 models the Lehigh E-57 compressor was employed.

As shown in Fig. 1, the Lehigh E-57 compressor has the suction service valve on the end of the compressor opposite the flywheel. Discharge service valve is on left side of compressor, as viewed from flywheel end.

On the V-93 compressor, the suction service valve is located on top of the compressor between the cylinder heads, and the discharge service valve is at the end of the compressor opposite the flywheel. This is shown in Fig. 2.

Discharge service valve of the Copeland 4AO compressor is to the right and above the suction service valve as viewed from the rear.

#### Condenser

The condenser, which can be observed in Fig. 2, is installed directly ahead of the car radiator and extends approximately one-third the way up in front of the radiator.

Both inlet and outlet connections of the condenser are on the same side of the condenser, which may be mounted with these connections on either side of the car.

#### Evaporator

Evaporator-blower assembly case, shown in Fig. 3 with front panel removed, is installed in the trunk of the car, as previously stated.

The assembly consists of the

coil, two blowers, thermostatic expansion valve, modulating or thermostatic by-pass valve, receiver, drier, and sight glass.

Thermostatic expansion valve used is the A-P 205-CE model. Modulating by-pass valve is the A-P 521 model.

The independently controlled blowers discharge cooled air into the car interior through round flexible ducts connected to discharge grilles in the package shelf directly above.

Similarly, return air is brought to the unit through a grille located in the center of the parcel shelf which is connected to the evaporator assembly case by means of a fabric duct.

Front panel of the evaporator assembly is removable for inspection and service.

#### Controls

Blowers in the evaporator case assembly are controlled by individual multi-speed switches mounted in a switch plate which is installed on the dashboard of the car at a convenient location, usually in the center.

Left-hand switch on the panel controls operation of the left-hand blower, and right-hand switch controls right-hand blower.

When no cooling is desired, the switches are turned to "off." Speed setting of blower switches determines amount of cooling obtained.

A magnetic clutch is available so that the compressor may be disengaged and engaged at the option of the driver.

To solve the problems of excessive capacity at high speeds and icing of the coil, Pivot employs the A-P 521 thermostatic modulating valve, shown in Fig. 3.

Installed in a by-pass line between the receiver tank and the coil, the modulating valve is thermostatically controlled by a remote bulb attached to the evaporator in the return air stream.

When the return air or the evaporator gets too cold, the modulating valve opens. This action opens the by-pass line between the receiver tank and the coil (by-passing the thermostatic expansion valve). Liquid refrigerant evaporates before it gets to the coil, thus performing no refrigerating effect in the coil itself.

Temperature of the coil rises until the return air reaches a predetermined point at which the modulating valve closes. Because it is a "modulating" valve instead of an on-off valve, the 521 permits maintenance of an almost constant temperature of

(Continued on next page)

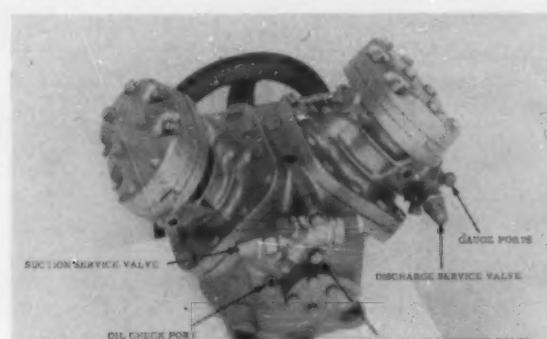


FIG. 1—Lehigh's E-57 compressor was employed on the 1954 model of the Pivot air conditioner.



FIG. 2 shows installation of Lehigh V-93 compressor in 1955 Pivot air conditioner.

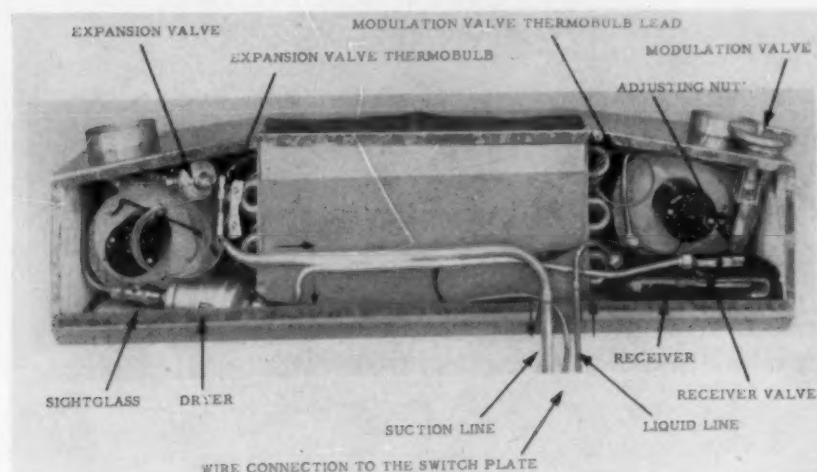


FIG. 3—Location of components in Pivot evaporator-blower assembly is readily seen in this photo.

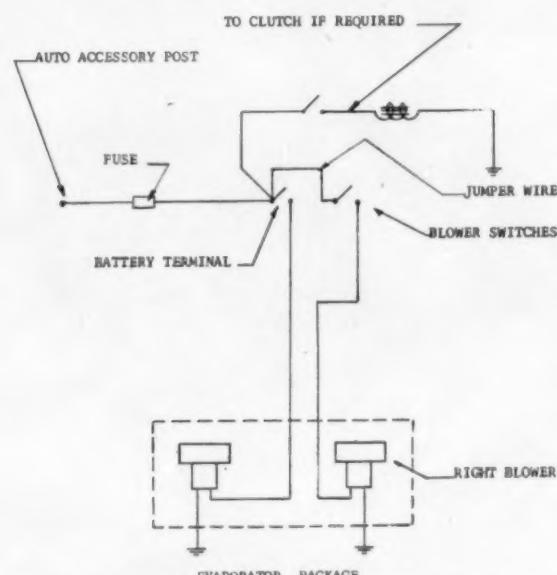


FIG. 4—Wiring diagram of Pivot system is relatively simple. Magnetic clutch is optional equipment.

## Government Contracts

### ARMY

Corps of Engineers, U. S. Army, Office of the District Engineer, Omaha District, 1709 Jackson St., Omaha 2, Nebr. CENTRAL HEATING PLANT and High temperature Hot Water Distribution System, Minot Air Force Base, Minot, N. Dak. All contractors interested in inspecting the site of the proposed work should contact the Resident Engineer, Corps of Engineers, Minot Air Force Base, Minot, North Dakota. Drawings, Specs, and bid forms will be furnished by this office upon request. Request should be addressed to above address, Attention of Construction Div. Plans and Specs will be on file in this office and in the office of the Resident Engineer, Corps of Engineers, Minot Air Force Base, Minot, North Dakota where additional info concerning the proposed work may be obtained. Plans and Specs will also be available for inspection at the following places: Garrison District, Corps of Engineers, Riverdale, N. D.; Kansas City District, Corps of Engineers, 601 Davidson Bldg., Kansas City, Mo.; Denver Area, Corps of Engineers, Bldg. 52, Denver Federal Center, Denver, Colo.; St. Paul District, Corps of Engineers, 1217 U. S. Post Office & Custom House, St. Paul, Minn.; Chicago District, Corps of Engineers, 475 Merchandise Mart, Merchandise Mart Plaza, Chicago 54, Ill.; New York District, Corps of Engineers, 111 East 16th St., New York 3, N. Y., and Philadelphia District, Corps of Engineers, P.O. Box 8629, General Services Bldg., 2635 Abbottsford Ave., Philadelphia, Pa.—Job—IFB ENG-25-066-56-3—Bid Opening 23 Aug. 55.

Commanding Officer, Chicago Quartermaster Depot, 1819 West Pershing Rd., Chicago 9, Ill. DISPENSER, DRINKING WATER, mechanically cooled.—555 ea.—IFB 56-12(B)—Bid opening 5 Aug. 55. DISPENSER, drinking water, mechanically cooled—33 ea.—IFB 56-9(B)—Bid opening 8 Aug. 55.

GENERAL SERVICES ADMINISTRATION General Services Administration, Region 5, 575 U. S. Courthouse, 219 So. Clark St., Chicago, Ill. The following items are under IFB CHD-1076—Bid opening 8-9-55: REFRIGERATORS, fed. spec. AA-R-211c and Amend. No. 1-17 ea. CABINETS, low temperature storage—2 ea.

### CONTRACTS AWARDED THROUGH JULY 22, 1955

Sacramento Air Materiel Area, McClellan Air Force Base, McClellan, Calif. Installation of Cooling Towers, (IFB 181)—Job—\$28,973—Frederick J. Chapek, 605 Fremont Way, Sacramento, Calif. Chicago Quartermaster Depot, U. S. Army, 1819 West Pershing Rd., Chicago 9, Ill. Refrigerator, Mechanical, Household, Size 12, 1 door hinged, left side, (IFB 55-550)—69 ea.—\$10,795—Frigidaire Sales Corp., 300 Taylor St., Dayton, Ohio. Refrigerator, Mechanical, Household, Size 12, hinged, right side, (IFB 55-550)—114 ea.—\$17,835—Frigidaire Sales Corp., 300 Taylor St., Dayton, Ohio. Erie Ordnance Depot, Port Clinton, Ohio. Installation of Constant Temperature and Humidity Control Equipment, Bldg. No. 207, Erie Ordnance Depot, Port Clinton, Ohio. (IFB 33-056-55-68)—Job—\$28,389—Benington Bros., Inc., 1719 Canton Ave., Toledo, Ohio.

For more information about products advertised on this page use Information Center, page 12.

## Gustin Bacon Names Page to Kansas City Post

KANSAS CITY, Mo.—Clark M. Page, formerly resident sales manager at Atlanta, has been appointed Kansas City district sales manager to succeed Herb J. Smith, the Gustin Bacon Mfg. Co. announced recently.

In his new capacity Page will administer the insulation manufacturing firm's sales activities in the states of Missouri, Kansas, Oklahoma, Colorado, Wyoming, Nebraska, Iowa, and South Dakota.

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

### POSITIONS WANTED

MANUFACTURERS' REPRESENTATIVE with over 25 years' experience in air conditioning and heating in Detroit and surrounding area, working closely with major design factors such as architects and consulting engineers and selling to contractors, seeks to represent major unitary and allied air conditioning lines. Operates with experienced associates. Write BOX A5297, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

AIR CONDITIONING and refrigeration engineer—N. Y. C. branch of leading manufacturer. Assist dealers, prepare layouts and quotations on commercial refrigeration equipment. Graduate engineer preferred but others with equivalent in experience considered. Excellent starting salary, and distinct advancement opportunity. Advise salary requirements and send resume. Reply BOX A5301, Air Conditioning & Refrigeration News.

FIELD SERVICE representative with full knowledge of refrigeration equipment. Excellent opportunity with a leading Midwest manufacturer. Must be free to travel and be between the ages of 28 and 37. Must be willing to move if necessary. Forward complete resume of background stating age, experience, and salary desired. Write BOX A5302, Air Conditioning & Refrigeration News.

DO YOU want a future that is secure and loaded with opportunity? We have a position open, right now, that offers all this and more. Some jobber experience and a willingness to grow are the only requirements. Why not write or call today? LEE EQUIPMENT COMPANY, 4721 Joy Road, Detroit 4, Michigan.

PROJECT ENGINEER—A large, well-known manufacturer of heating and cooling equipment located near Chicago is expanding its engineering staff and facilities, and seeks a responsible project engineer qualified to design residential air conditioning equipment. Our organization knows of this advertisement and your response will be held in strictest confidence. In replying, please include a resume of your background, experience and salary requirements. Reply to BOX A5281, Air Conditioning & Refrigeration News.

FIELD SERVICE engineer, with 10 years' or more commercial refrigeration experience (preferably food store), is desired by manufacturer recognized as among the leaders in food store refrigeration equipment field. Must be free to travel and willing to move, if necessary, at our expense. Promotions create need for additional men in eastern and southeastern states. Position provides salary, expenses, car allowance, vacation with pay, insurance, hospitalization. Here's a real opportunity for a man 30 to 45 years.

Replies held strictly confidential. Send recent photo with full particulars of experience to BOX A5283, Air Conditioning & Refrigeration News.

AIR CONDITIONING engineer college graduate with manufacturing or contractor experience in selecting equipment, design, and application to maintain technical contact with salesmen. Midwest manufacturer of compressors, package chillers, etc. to 60 tons. Salary open. Write letter giving full information as to education, experience, salary, etc. to BOX A5288, Air Conditioning & Refrigeration News.

MIDWEST MANUFACTURER has an opening for an application specialist to report to sales manager of cooling equipment. Should have actual experience in application of comfort cooling equipment. Some travel. Will assist distributors and dealers in establishing application practices. Assist in preparing installation manuals and conduct training programs. Our employees know of this ad. Send complete resume of education, experience, salary, etc. to BOX A5289, Air Conditioning & Refrigeration News.

NATIONAL MANUFACTURER, leader in air conditioning and refrigeration field, wants sales engineer for top distributor in Toledo and Cleveland. Ideal working conditions. High-level compensation. Send resume of business experience. Address BOX A5299, Air Conditioning & Refrigeration News.

AIR CONDITIONING engineer—An old, established California manufac-

turer offers a splendid opportunity for permanent position with duties involving the design and testing of 3 and 5-ton package home air conditioning systems. Must be thoroughly experienced in refrigeration engineering and have college degree or equivalent in thermodynamics, heating and ventilation with a minimum of three years' practical experience. Please present brochure with photograph together with salary requirements. Replies confidential. BOX A5300, Air Conditioning & Refrigeration News.

REFRIGERATION APPLICATION engineer—N. Y. C. branch of leading manufacturer. Assist dealers, prepare layouts and quotations on commercial refrigeration equipment. Graduate engineer preferred but others with equivalent in experience considered. Excellent starting salary, and distinct advancement opportunity. Advise salary requirements and send resume. Reply BOX A5301, Air Conditioning & Refrigeration News.

FIELD SERVICE representative with full knowledge of refrigeration equipment. Excellent opportunity with a leading Midwest manufacturer. Must be free to travel and be between the ages of 28 and 37. Must be willing to move if necessary. Forward complete resume of background stating age, experience, and salary desired. Write BOX A5302, Air Conditioning & Refrigeration News.

WANTED: REFRIGERATION and air conditioning wholesalers and manufacturer's agents interested in handling high-quality equipment. Have five lines consisting of cooling towers, air handling units and air-cooled condensers. Some territories open in most states. Write for literature. All inquiries acknowledged. BOX A5304, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

BRAND NEW 1/2 h.p. open-type units with two row condenser with thermotron type A Delco motor 115 V. 60 cycle. Complete in original crates Model O, each \$42.50, 45 pcs. Also nationally-known 1 h.p. motors 220/440 V. 3 ph. 60 cycle 1725 r.p.m., heavy-duty 203 frame, \$39.50 new in original crates. General replacement household controls type RJ dial plate & knob 25° capillary 15 degrees to 28 degrees, new in carton, \$2.25 each. 9" industrial thermometers 40 minus to 110 F. mercury fill, new in cartons, each \$3.95. Full satisfaction or refund. Prompt shipment. R. & R. EQUIPMENT COMPANY, 2724 Third Ave., Bronx 54, N. Y.

REFRIGERATION VALVES: Attention servicemen; send for our catalog of refrigeration parts; savings up to 50%. WALTER W. STARR REFRIGERATION SUPPLIES, 2833 Lincoln Ave., Chicago 13, Illinois.

FOR SALE: Commercial refrigeration and air conditioning business located in central Missouri, well established, two major franchises. Write BOX A5305, Air Conditioning & Refrigeration News.

BUSINESS OPPORTUNITIES

WELL-ESTABLISHED AIR conditioning and commercial refrigeration firm. Franchised lines. Location N.Y.C. Operating seven service trucks. Large quarters with complete shop facilities. Ideal location. Owners have other interests, will sell for less than actual value, turn over complete business. Good opportunity for industrious party. Write BOX A5298, Air Conditioning & Refrigeration News.

### MISCELLANEOUS

INVENTOR HAS new type low side oil filter which is trouble free, easy to make, easy to install, should be on every installation large or small. Inventor wants a manufacturer to make and sell or buy said filter. Please contact: EDWARD F. ANDERSON, 763 Edgewood St., Baltimore 29, Md.

"SEALED UNIT" Rebuilding—Basic Tools & Methods—an instructive copyrighted manual giving complete details on economically equipping your shop to handle hermetic rebuilding. Exclusive trade secrets unavailable elsewhere. Mail postcard for descriptive folder. H. W. CUSTER, P. O. Box 98, Center Line, Michigan.

MR. AL H. THOMASON please write NED DUSENBERY, P. O. 752, Yuma, Arizona.

## Hupp-Perfection-- Carrier Room Conditioner--

(Concluded from Page 1, Col. 2) will be continued as a division of Hupp, with Smith and the other officials of Perfection continuing to manage the affairs of that division, it was explained.

Under the agreement, preferred and common stock of Hupp will be issued in exchange for the common stock of Perfection. Each share of Perfection will receive two fifths of a share of Hupp 5% preferred stock of the par value of \$50 per share, and two shares of Hupp common stock.

The preferred stock will be convertible into common stock of Hupp until the end of 1958 at a price of \$8 per share of common stock through Dec. 31, 1956, of \$9 per share in 1957, and of \$10 per share in 1958.

### MERGER BRINGS DIVERSITY

"The merger will result in the combined companies having a substantial diversity of products and markets," it was pointed out. "Aside from military items, Hupp is primarily a manufacturer of components for other manufacturers; Perfection is primarily a manufacturer of consumer items."

Hupp has manufacturing plants in Detroit and Chicago and is presently terminating the operations of its Globe Stamping Div. in Cleveland. Perfection has plants in Cleveland and is now establishing a plant in Waynesboro, Ga.

In 1954, combined sales of the two companies amounted to approximately \$34,000,000. The combined assets of the two companies will be in excess of \$27,000,000. Capital stock and surplus of the merged companies will amount to approximately \$18,600,000.

### STOCKHOLDERS AUTHORITY

A statement by Gearheart said: "At the last annual meeting of Hupp, the stockholders authorized the issuance of \$10,000,000 of preferred and 1,000,000 shares of common stock for the purpose of acquiring companies and products.

"The Hupp-Perfection merger is the first major step in carrying out the wishes of the stockholders with a view to building Hupp into an important manufacturing company."

### G-E Appoints Kelly Weathertron Retailer

BLOOMFIELD, N. J.—Appointment of James S. Kelly, Inc., Point Pleasant, N. J. as a retailer for G-E "Weathertron" products has been announced by General Electric Co.'s Weathertron Dept.

The Kelly firm will distribute Weathertrons in part of Ocean County area.

### SALESMAN WANTED

Manufacturer's representative for Ohio to sell complete line of commercial refrigeration and to contact restaurant equipment trade. For complete information, write

BOX A5303  
Air Conditioning &  
Refrigeration News

(Concluded from Page 1, Col. 2) air conditioner manager for Carrier.

"The basic difference from an engineering standpoint between the new Carrier Roomette and standard models is that air for refrigerant condensing is drawn through the bottom instead of the back of the unit," it was explained.

"Installation in many cases is so simple that most people can do it themselves."

"For first floor locations in a house built over a crawl space or with a well-ventilated basement, a 13 by 15-in. hole is simply cut in the floor to fit the opening at the bottom of the unit."

The Carrier is then set over the hole and provided with electric power.

"In second floor and other installations where direct condens-



NEW Carrier Roomette air conditioner which doubles as end table.

ing into unused space below is not possible, a short duct can be run from the bottom of the unit through the exterior wall. This

might be fitted between the floor joists, or it could be made in the form of a small platform on which the Carrier would be placed."

"Many people have objected to room air conditioners in the normal window-sill position because they block off a portion of the light and view, and because the exterior appearance tends to be unsightly," Egan said. "The new Roomette eliminates all of these problems."

The Roomette is designed for use with standard 115-volt household circuits. The modern cabinet is available in a driftwood beige color. All units are equipped with thermostats and filters.

### Hospital Gets 2 Conditioners

ROCKINGHAM, N. C.—Two  $\frac{3}{4}$ -ton air conditioning units were given by the Civitan Club recently to the Memorial Hospital at Rockingham.

## Thunderbird Motel Gets Packaged Conditioners

MIAMI BEACH, Fla.—Now under construction, the new Thunderbird motel—located on Collins Ave. and 185 St.—is slated to be equipped with one of the largest motel air conditioning systems in the Miami Beach area.

Scheduled for fall completion, the four-story Thunderbird will be served by 10 large Chrysler Airtemp packaged air conditioners with a total cooling capacity of 220 tons. Each of the nine major areas of the motel will be comfort zoned, it was explained.

Owners are Albert and Paul Pollak and Aaron Courshen. Taylor Construction Co. is the builder and cooling equipment is being installed by Miami Air Conditioning Co., according to the announcement.



## No need to shop around—Anaconda has everything you need!

Hundreds of distributors stock the complete Anaconda line.

Soft Copper Tubes in Packaged Coils—50-ft. lengths.  
Hard Copper Tubes—straight lengths.

Fittings—elbows, tees, couplings, unions, adapters, reduction combinations, flush fittings, fitting end plugs, tube caps, return bends.

Vibration Eliminators.

**Quality—Consistent Uniformity**—Strict quality control from start to finish gives you uniform working and service characteristics every time.

**See Your Anaconda Distributor**—He can handle all your requirements.

The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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